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ABSTRACT

This document contains 16 speeches and small group presentations given at a conference that focused on the needs for health care in the future. The following papers are included: "Cost Containment" (Thomas D. Hatch); "Educational Issues for Tomorrow's Health Occupations--Advanced Technology" (Rex Montgomery); "Mental Health Curricula Content in the Preparation of Technical and Vocational Health Care Providers in Long Term Care Facilities" (Mary S. Harper); "Wellness: Theme of the 80s" (Chris Schreurs and Kevin Israel); "Building Today for a Better Tomorrow: Problems and Prospects for Health Occupations Education in the 21st Century" (Mary M. Randall); "Future Directions of Health Care and Health Care Education" (Catherine B. Junge); "Health Careers Framework and Model Curriculum Standards" (Beverly Campbell); "Updating Teaching Technology" (small group session); "Multicompetency: The Illinois Experience" (Archie G. Lugenbeel); "Restructuring the Health Care Labor Force: The Rise of the Multi-Skilled Allied Health Practitioner" (Keith D. Blayney); "Maricopa Community College's Approach to High School/College Articulation" (John L. Bradley); "Direction of Dental and Dental Auxiliary Education" (Karen M. Duffy); "Nursing Education Issues" (Karla K. Berns); "Vocational Health Occupations Education in High Schools" (Nancy Langley-Raynor); "Postsecondary Allied Health Programs" (small group session); and "Continuing Education--Adult and Short Term Preparatory" (small group session). The conference agenda and lists of presenters, group leaders, facilitators, and participants are included in the proceedings. (KC)

NATIONAL HEALTH OCCUPATIONS EDUCATION CURRICULUM CONFERENCE

ED278787

CONFERENCE PROCEEDINGS

October 8-10, 1986

Marriott Hotel

Des Moines, Iowa

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The following groups have endorsed the Conference:

American Association of Homes for the Aging
American Dental Assistants Association
American Dental Association
American Medical Association, Department of Allied Health Education
American Society of Allied Health Professions
American Vocational Association, Health Occupations Education Division
Association of Health Occupations Teacher Educators
Health Occupations Students of America
National Association for State Administrators of Health Occupations Education
National Association of Health Occupations Teachers
National Home Caring Council
U. S. Army, Academy of Health Sciences
Veterans Administration, Office of Geriatrics and Extended Care

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National Health Occupations Education Curriculum Conference
October 8-10, 1986
Des Moines, Iowa

PROGRAM

Tuesday, October 7, 1986

7:00 p.m. Registration Open

7:30 p.m. Let's Get Acquainted - Wine and Cheese
Sponsored by: Iowa Health Occupations Education Division,
Iowa Vocational Association

Wednesday, October 8, 1986

7:30 a.m. Registration Open

8:00 a.m. Group Facilitators Meeting
Group facilitators for Wednesday's small group sessions will meet

8:30 a.m. GENERAL SESSION: CONCERNS
Presiding: Catherine B. Junge
U. S. Department of Education

Welcome
Charles W. Case, The University of Iowa
Jim Athen, Department of Education

Panel Presentation:

Cost Containment
Thomas D. Hatch
U. S. Department of Health and Human Services

Advanced Technology
Rex Montgomery
The University of Iowa

The Aging Population
Mary S. Harper
U. S. Department of Health and Human Services

Wellness: The Theme of the 80's
Chris Schreurs and Kevin Israel
Des Moines Area Community College

10:30 a.m. Coffee Break

11:00 a.m. Panel (continued)

Wednesday, October 8, 1986 (cont.)

12:30 p.m. **Planned Luncheon**

1:30 p.m. **Charge To Small Groups**

2:00 p.m. **Small Group Sessions**
Participants may select the group of their choice, with a limit of 20 participants in each group

Group A: Cost Containment Discussion
Facilitator: Paul Pietzsch
Health Policy Corporation of Iowa

Group B: Cost Containment Discussion
Facilitator: Glenn E. Potter
Iowa Methodist Medical Center

Group C: Advanced Technology Discussion
Facilitator: Burgess Shriver
Des Moines Area Community College

Group D: Advanced Technology Discussion
Facilitator: Lois Hess
Wisconsin Board of Vocational-Technical and Adult Education

Group E: The Aging Population Discussion
Facilitator: Sharon Lesan
Department of Elder Affairs

Group F: The Aging Population Discussion
Facilitator: Katy McNally
Des Moines Area Community College

Group G: Wellness Discussion
Facilitator: Dennis Cryer
University of Northern Iowa

Group H: Wellness Discussion
Facilitator: Beverly J. Kukowski
Drake University

Group I: Exhibits
Exhibits are open from 12:00 - 5:00 p.m.

3:15 p.m. **Refreshment Break**

3:30 p.m. **Repeat of Small Group Sessions**
Repeat of 2:00 p.m. small group sessions.
Select another topic of interest

4:30 p.m. **Convene in General Session**
Report of Group Facilitators

Wednesday, October 8, 1986 (cont.)

7:00 p.m. Banquet
Presiding: Chet Rzonca, The University of Iowa

Building Today for a Better Tomorrow
Mary M. Randall
American Vocational Association

Future Directions for Health Care and Health Care Education
Catherine B. Junge
U. S. Department of Education

Overview of Health Occupations Students of America
Melissa Monarch, HOSA President
Bowling Green, KY

9:00 p.m. Group Facilitators Meeting
Group facilitators for Thursday afternoon small group sessions will meet

Thursday, October 9, 1986

8:00 a.m. Registration Open

8:30 a.m. GENERAL SESSION: COOPERATION
Presiding: Norma Jean Schira
Western Kentucky University

Panel Presentation:

California Model Site Project
Beverly Campbell
California Department of Education

*Updating Teaching Technology to Meet Demands of Today/Tomorrow
David R. Bunting
Kirkwood Community College

The Illinois Model for Multi-Competency Personnel
Archie G. Lugenbeel
Southern Illinois University at Carbondale

The Alabama Model for Multi-Competency Personnel
Keith D. Blayney
University of Alabama at Birmingham

Articulation Models - Secondary to Post-secondary
John L. Bradley
Maricopa Community College

10:30 a.m. Break

11:00 a.m. Panel (continued)

*Presentation not available.

Thursday, October 9, 1986 (cont.)

12:30 p.m. **Planned Luncheon**
Presenters/facilitators for Friday's sessions will meet during luncheon

2:00 p.m. **Small Group Sessions**
Participants may select the group of their choice, with a limit of 20 participants in each group

Group A: California Model Site Project
Facilitator: Kathy Linder-Harris
California odel Site Project

Group B: Updating Teaching Technology
Facilitator: Beverly Richards
The University of Iowa

Group C: Updating Teaching Technology
Facilitator: Larry Hudson
University of Central Florida

Group D: The Illinois Model
Facilitator: Lorraine Summers
Illinois Board of Education

Group E: The Illinois Model
Facilitator: Ann Gilbert
Illinois Board of Education

Group F: The Alabama Model
Facilitator: Larry Dahl
Hawkeye Institute of Technology

Group G: Articulation Models
Facilitator: Dolores LaMothe
Metro-Tech Voc Institute of Phoenix

Group H: Articulation Models
Facilitator: Ellen O. Pearson
Arizona Department of Education

Group I: Exhibits
Exhibits are open from 12:00 - 6:00 p.m.

3:15 p.m. **Refreshment Break**

3:45 p.m. **Repeat of Small Group Sessions**
Repeat of 2:00 p.m. small group sessions.
Select another topic of interest

4:30 p.m. **Reconvene in General Session**
Report of group facilitators

Friday, October 10, 1986

7:30 a.m. Registration Open

7:30 a.m. Planned Breakfast

8:30 a.m. GENERAL SESSION: CREATIVITY
Presiding: Beverly Campbell
California Department of Education

*Futuring--What Will Tomorrow Bring
Robert A. Jaffarian
The New York State Education Department

9:30 a.m. Panel Presentations:

Dental Science Curricula
Karen Duffy
American Dental Association

Nursing Education Issues
Karla K. Berns
Northeast Iowa Technical Institute

Secondary Programs
Nancy Raynor
North Carolina Department of Education

Postsecondary Allied Health Programs
L. M. Detmer
American Medical Association

Continuing Education - Adult and Short Term Preparatory
Margery Wasicek
North Iowa Area Community College

10:15 a.m. Break

10:30 a.m. Small Group Sessions
Participants may select the group of their choice

Group A: Dental Science
Facilitator: Karen Duffy
American Dental Association

Group B: Nursing Education Issues
Facilitator: Karla K. Berns
Northeast Iowa Technical Institute

Group C: Secondary Programs
Facilitator: Nancy Raynor
North Carolina Department of Public Instruction

*Presentation not available

Friday, October 10, 1986 (cont.)

Group D: Postsecondary Allied Health
Facilitator: Carol Gleich
U. S. Department of Health and Human Services

Group E: Postsecondary Allied Health
Facilitator: L. M. Detmer
American Medical Association

Group F: Continuing Education
Facilitator: Joyce Downing
Kirkwood Community College

11:30 a.m. Reconvene in General Session
Report of group facilitators

12:00 noon Adjournment

PROGRAM OBJECTIVES

Upon completion of the Conference, participants should be able to:

- assess the changes occurring in health care delivery and discuss some major issues that will have an impact on health occupations education programs.
- describe some innovative educational models that have been used to respond to the changes in the delivery system.
- propose specific program curricula changes for the preparation of future health occupations employees.

SMALL GROUP CHARGE

The goals of the small group activities are to provide all participants an opportunity to clarify and further explore the concepts presented during the formal presentations, as well as to share with others their experiences and successes.

It is hoped that through this group process and by using the expertise of each of you attending the Conference, we will not only review educational concerns but begin to formalize strategies to better prepare men and women for their future in health care delivery.

To accomplish the goals and better meet your needs we are not assigning individuals to specific groups. There will be two concurrent groups in the afternoon for each topic presented in the morning. Each group will be repeated once consecutively. This will give you an opportunity to further explore two of the main topics presented. All facilitators will summarize and report on their group's discussion. In addition to the oral report, these summaries will be available later in conference proceedings. This will give you an opportunity to benefit from all discussion at the Conference.

The success of the group interaction will depend on you. We ask your help to keep the groups small and if a session is filled, select an alternative group. It is also important that you help keep the group on target and your questions/comments pertain to the topic. You may want to jot down concepts during the formal presentation you feel should be further explored. We thank you for your help in making the Conference a success.

COST CONTAINMENT

Thomas D. Hatch

What I would like to do this morning is to describe some of the indicators of why cost containment is an important issue, give an overview of some general issues and developments in health manpower, review some of the issues related to cost which I believe will impact on and be important for those engaged in the education and training of health personnel, and make a few predictions which may (or will hopefully) be relevant to the subject of the Conference.

Indicators

- Health is the second largest industry in the U.S. and consumes more than 10% of the GNP;
- We are now spending more on health than the total 1981 Federal Budget;
- Cost increases are still running at 2-3 times the general rate of inflation;
- The HHS budget is now the third largest in the world - after the U.S. and U.S.S.R. - 96 % of which is in entitlements.

Thomas D. Hatch, Director, Bureau of Health Professions, Health Resources and Services Administration, Department of Health and Human Services.

Some examples of what is happening in hospitals include:

1. Hospital expenses increased by 10% in the first quarter of 1986 - compared to about 5% in the first quarter of 1985.
2. Hospital cost per case increased about 11% in the first quarter of 1986 compared to 9+% in the first quarter of 1985.

At the same time admissions are down, length of stay is down, staffed beds are down, surgeries are down, FTE employees are down - but outpatient visits are up in the first quarter of 1986 by almost 10%. For those of us involved in health manpower development, it might be useful to review, against this background, some of the overall developments in that area. This is important for a number of reasons, not the least of which is that personnel costs constitute a significant portion of health care costs - in hospitals, for example, as much as 60-70%.

Health Manpower

The numbers of health personnel in all fields in the United States have continued to increase through the mid 1980s, although at a somewhat lower rate than during the 1970s. This decelerated growth in the supply of health care providers largely reflects the tapering off of growth (and, in some cases actual declines) in the numbers of persons enrolling in and graduating from health professions schools/programs. However, despite the slowdown in growth over the past few years, the supplies of health personnel now stand at levels higher than they have ever been and their growth rate continues to outpace that of the population. Employment continues to grow and, except for nurse aides, orderlies, and attendants, unemployment is still well below the national average.

Since the beginning of the 1980s, increases in the numbers of physicians, dentists, podiatrists, pharmacists, optometrists, veterinarians,

and registered nurses have ranged from 5% (for optometrists) to 18% (for veterinarians). Similarly, the growth in the allied health occupations has averaged about 13% since 1980. By way of comparison, the resident population of the U.S. grew by only 4% from 1980 to 1984. As a result, the ratios of the number of practitioners to population have continued to increase.

Women are becoming an increasingly large proportion of the student and practitioner population of those health professions that have been traditionally male dominated. In academic year 1983-1984, women represented almost one-fifth to one-third of students in nearly all the disciplines; in pharmacy and veterinary medicine, approximately one-half of all students were women. A marked change has also occurred among physician assistants who in the 1970s were almost exclusively males; in 1984, over 40% of practicing PAs and more than 60% of PA students were women.

As a consequence of the sustained increase in the number of women students in health professions schools, both the number and percent of female practitioners in these professions are expected to continue to grow to the end of the century. By the year 2000, female practitioners are expected to constitute significant proportions of the supplies of pharmacists (40%), veterinarians (36%), optometrists (23%), physicians (21%), and dentists (16%). Although there have been significant increases in the representation of females in predominantly male professions, there have been no similar increases in the representation of males in predominantly female fields of nursing and allied health.

The geographic distribution of health care providers (especially as related to population) continues to be an area of national concern. The increase in practitioners in all occupations has resulted in increases in the practitioner-to-population ratios in every state. However, wide variations in

state ratios continue to exist for most occupations and the relative distribution of practitioners by state has changed little. Some evidence, for example, indicates that the increased supply of physicians has improved their geographic distribution, in that a larger proportion of the younger physicians are locating outside of the most highly populated areas. However, the total number of newly trained physicians establishing practice in rural areas is still comparatively small. About 14 million persons or 6% of the U.S. resident population remain underserved in the Nation's primary care health manpower shortage areas.

Ways in which health care services are provided and financed in the United States are undergoing significant change, bringing significant alterations in practice settings and in ways of utilizing health professions. For example, the past few years have seen rapid growth in non-traditional delivery settings such as health maintenance organizations (HMOs), ambulatory surgery centers, and freestanding emergency and diagnostic centers. In the area of health care financing, the recent implementation of the Medicare prospective payment reimbursement system represents a major change whose impact on health personnel training and use has yet to be fully evaluated. This is probably the single most significant cost containment measure and has major ramifications.

The numbers of persons preparing for careers in the health fields continue to be at or near their highest levels. However, within most disciplines the total number of students enrolled is either leveling off or declining. The total number of students has been declining since the mid-1970s in schools of pharmacy and since the early 1980s in schools of dentistry. Total enrollments in allopathic medical schools declined for the first time in 37 years in academic year 1984-85. Similar leveling off or

declining enrollments are taking place in nursing, clinical laboratory and radiography. Over the next decade, most disciplines are expected to experience declines in the number of graduates.

Changes in the racial/ethnic composition of the health professions student population have been much less than substantial and have been occurring at different paces from the individual racial/ethnic minority groups. For example, since the mid-1970s, increases in the number and percentages of Black students enrolled in health professions schools have generally been relatively less than for most other minority groups. Trends in the enrollment of racial/ethnic minorities indicate that practitioners from these groups will continue to comprise a relatively small percentage of the health care work force in the coming years.

In summary, while most disciplines are expected to experience declines in the number of new additions to the practitioner pool over the course of the next several years, the supplies of health personnel are projected to continue to increase through the year 2000 and continued increases in practitioner-to-population ratios are expected.

Issues

Population growth, the aging of the population, and other factors are expected to increase the demand for the services of health personnel in the future. It is expected that in most of the health fields, supply and requirements in 1990 and 2000 will be in rough balance. The aggregate supply of physicians is expected to exceed requirements. On the other hand, the supplies of some physician specialists, practitioners in some areas of public health, and the supply of nurses prepared at baccalaureate and higher degree levels are expected to fall short of projected requirements. Shortages are also predicted in Occupational and Physical Therapy.

In addressing the future issues one must recognize that each discipline has its own unique characteristics. However, a number of developments are applicable to the health professions generally. Clearly this is a time of rapid change in the financing and delivery of health services. The impact of these changes on the education and utilization of health professions could be profound. While many of the developments taking place are hard to separate and categorize, I would like to briefly summarize some of these issues.

First are developments that I would call "service related". These have the greatest implications for the supply, requirements, and utilization of personnel, as well as for educational programs:

1. Cost - Clearly this is currently the overriding issue in health services delivery and can be expected to be for some time to come. Manifestations of the concern to control costs include prospective reimbursement (DRGs, HMOs, PPOs, etc.); development of business coalitions, contract care (such as recent developments in the California and Massachusetts Medicaid programs); and contracting out of certain functions such as radiology, laboratory services, dietary, and emergency services.

2. Competition - This is directly related to cost and includes the development, among other things, of new delivery systems, for-profit enterprises, storefront services, etc. "Vertical integrations," "marketing," "profit centers," and other terms have become the norm in health.

3. Technology - New developments in such areas as instrumentation, equipment and transplantation have and will continue to impact on personnel requirements and utilization. Also, communications and computer technology can be expected to continue to become more

sophisticated and widely applicable.

4. Demography - Current and projected shifts in the age and ethnic composition of the population and in migration will have significant impact on the needs and characteristics of services as well as the type and distribution of personnel, both geographic and specialty.

Secondly, there are a variety of issues which can be categorized as primarily education.

1. Educational Institutions - are facing increasing pressures to reduce the cost of educational programs as well as overall institutional budgets. This has significant implications, not only for the quality of the instruction provided, but also for the setting of priorities and balance between and among programs. In some disciplines, concomitant pressures for escalation of academic requirements will increase the intensity of cost pressures. In addition, the prospect of an aging infrastructure (buildings, laboratories, etc.) constructed during the expansion years of the 1960s and 1970s could become a serious problem in the 1980s and 1990s. Issues of faculty salaries, qualifications, and availability should also be mentioned.

2. Clinical Education - The impact of the various problems identified above can be expected to manifest themselves in a variety of ways on what most would agree is an essential component in preparing competent health professionals - clinical education. Programs directly sponsored by clinical facilities (currently, overwhelmingly hospitals) are already feeling the impact of cost control imposed by prospective payment. Cost containment in health services will impact on this area most profoundly.

Hospitals that are affiliates of programs sponsored by educational institutions will increasingly feel pressure to reassess their relationships and can be expected to consider terminating affiliations or charging the institutions or the students. Some of this has already begun.

The rapid development of new corporate and/or investor-owned delivery systems will also affect the type, nature and availability of clinical training. Will, for example, profit-making enterprises be interested in providing clinical training? Can educational institutions adapt to changing delivery system and service needs to develop clinical programs with HMOs, nursing homes, and home health agencies.

I would also like to mention cost or "cost containment" as an issue related to the future pool of students. Developments in demography, such as projections in the number of 18-year-olds who will be available to enter educational programs as well as the population shifts noted above, will be significant. In addition, competing career opportunities, particularly for women, will have considerable additional impact on the applicant pool. Increasing costs to students and the attendant level of indebtedness, the intensity of health professions training programs, future income potential, and perceptions of oversupply all will add to this confusion.

Predictions

Let me now make a few personal predictions about the future. I believe the demand for health services will continue to escalate particularly as the population ages. At the same time, cost considerations will be a high priority concern for the foreseeable future. The associated competitive climate will continue and we will see increasing movement in the "corporatization" of health services - HMOs and other similar capitation approaches, alternative delivery settings, less inpatient care, more for-

profit enterprises, etc.

Technology will continue to advance, but will increasingly be carefully scrutinized from the cost/benefit aspect, as well as for ethical considerations. Current concerns about organ transplantation and advanced life support systems are good examples. Computer and communications technology will continue to impact significantly, particularly as they are seen to improve economy and efficiency of services.

Demographics will also be a significant factor for the future, with the age and ethnic composition of the population being the most important. While the population shifts to the sunbelt will probably continue, they may be at a slower pace if oil prices are stabilized over an extended period.

Educational programs can expect to continue to experience pressures to reduce costs, and probably enrollments, while at the same time having to keep up with all of the above; which have significant implications for curriculum content, facility and equipment requirements, faculty competency, student recruitment and probably most important, clinical affiliations. Hospitals will be decreasingly relied upon for clinical training and new approaches will have to be developed as service delivery shifts occur.

Finally, while there will be many problems, I believe there will also be new opportunities. Newly developing systems and approaches to delivering health services, not bound by the traditions and hierarchies of the past, can stimulate approaches to providing services in the most effective way from both a cost and quality standpoint. There are new and promising horizons in technology and diversity of opportunity. Most of all, the system will continue to need talented dedicated and caring professionals.

SMALL GROUP SESSION

Cost Containment

Facilitators: Paul Pietzsch and Glenn Potter

Summary of Workshop Discussions

* The goal is cost management (rather that cost containment) and getting "better value for the health care dollar". Key words are efficiency, quality and access.
* Health has become a major social, economic and political issue. Under the leadership of public and private payers of health care, fundamental changes are occurring in the financing and delivery of health services which directly affects the type, use and work setting for health personnel.
* Cost management is not an issue that can be dealt with in isolation. Related issues include: poverty, environment, aging, ethics, lifestyle, family structure, technology, research, public education, provider education, rural/urban migration, accessibility, quality of care, liability and tort reform, etc. All factors must be dealt with simultaneously.
* Educators will find solutions to these and other issues by having closer dialogue with providers, policy makers, consumers, communities, business leaders, legislators, and health planners.
* There appears to be a reduction in the number of applicants seeking careers in health occupations. This is due in part to more employment opportunity in other areas and fewer young people due to the demographic changes in the population.

Recommendations

* Health personnel should be more skilled in terms of breadth of skill. At

the same time, there is a push toward more levels, rather than fewer levels; thus, it may be that the answer is to provide basic education/ training which can be broadened, e.g., allowing the employer to put the polish on. Thus, there would be articulation or moving from one level of a skill to another, vertically and horizontally.

* There will be a need in the future for more multi-competency workers who are doing more jobs.
* There is a need to revise the basic preparatory curricula to meet the changing community needs; e.g., fully trained in acute care including obstetrics versus new types of delivery systems and more emphasis on aging, wellness and health promotion.
* Curricula should emphasize problem solving rather than just teaching the facts.
* Curricula should stress the importance of flexibility as a worker in today's and tomorrow's health care delivery world.
* All health occupations personnel should become computer friendly.

EDUCATIONAL ISSUES FOR TOMORROW'S HEALTH OCCUPATIONS - ADVANCED TECHNOLOGY

Rex Montgomery

One of the essays that I wrote as a teenager in grammar school around 1935 addressed the question: "Is man a machine?" Although our knowledge at that time was more limited than it is today, I felt that I could answer in the affirmative for the following reasons: man can perform work; man burns fuel (food) in oxygen to give carbon dioxide and water; man can be repaired in some cases (fractures); man obeys the physical laws; man wears out; and so on. Considering the same question today these answers would still be true, but in the light of recent advances on genetic information, tissue transplants, "engine" wearout (geriatrics), repair, disease diagnosis and nutrition, a person (machine) can usually perform better for a longer time.

The advances made over these 50 years have laid the basis for modern research in medicine and health areas in general. I would draw your attention to a few areas that reflect the "cutting edge".

1. Non-invasive imaging techniques
2. Treatment of disease
    a) molecular understanding of diseases leading to improved drugs
    b) immunological approaches to diagnosis and therapy; hybridomas

---

Rex Montgomery, Associate Dean for Academic Affairs, The University of Iowa

and monoclonal antibodies

c) techniques using lasers

d) replacement of tissues and organs

3. Preventive medicine

a) nutrition

b) inborn errors

c) environmental insults

d) test tube (in vitro) fertilization

4. Educational Planning

Non-invasive Imaging Techniques

After taking the history and physical diagnosis of a patient and receiving results of the laboratory analysis of various samples it is often desirable to learn whatever else one can, preferably without invading the body with needles and scalpel. X-rays have been used for many years but the contrast between different tissues is not always optimal--injection of contrast media may improve the definition. In some cases, the injection of radioactive isotopes that become concentrated in certain tissues permits imaging of the organ concerned, such as imaging the heart with radioactive technicium. By the use of fast CT scans it is possible to "stop" the heart in various stages of the beat, permitting computation of ventricular size and the visualization of hypertrophy of the cardiac wall. Similarly, ultrasound has been applied to imaging of the heart, to mammography, to recognizing in utero abnormalities of the fetus thus permitting surgical intervention, such as in hydrocephalus, and to guidance of needles inserted into the body, for example, amniocentesis. In most of these cases of imaging the information obtained is morphological, but with the introduction of magnetic resonance imaging (MRI), the morphology can be further defined by the changes in the biochemistry of the cells.

MRI is a spectroscopic research tool that analyzes the atomic environments in several molecules, principally ^{31}P, ^{19}F, ^{13}C, and ^{15}N in the biological system. Present experimental equipment looking at cells and living tissue can measure constituent changes in vivo that are real--not by-products of metabolism that are on the way to excretion. Thus the change in ATP and creatine phosphate in the contracting muscle is possible. It is a matter of time before the affect of a drug on a tissue, for example antitumor drug on a tumor, will be visualized in situ. More recently positron emission tomography (PET) scanning takes advantage of the radioemissions of short-lived isotopes, such as ^{18}F, to reflect the metabolism of the brain under changing stimuli.

Treatment of Disease

The understanding of disease represents an important area of research for the development of any new treatment. Such research has extended in the last decade or so to molecular biology, one result of which has been the identification in diabetes of several kinds of hormone and hormone-receptor deficiencies; it is proposed that a number of diabetes-related pathologies may derive from the lack of blood glucose control and the source of insulin, which has usually been from the pancreas of pig. By genetic engineering, common bacteria are now producing human insulin and implantable insulin pumps deliver insulin to the body in amounts more appropriate to the need over the whole day as opposed to the injection of insulin two or so times a day; hyperglycemia is better controlled.

An increasing number of diseases are found to be related to hereditary (genetic) abnormalities and can be predicted in utero or from the parenteral DNAs. It is commonplace to determine these abnormalities at birth (PKU) or in utero (amniocentesis) from which information the baby can be handled properly with feeding and other support. The detection of sickle cell

hemoglobin traits is now more definitive using a genetic analysis by restriction enzymes/hybridization techniques with DNA from the patient. At less of a molecular level, research into specific receptors on cells has demonstrated opiate receptors in brain and spinal chord that has led to better use of narcotic drugs to control acute and chronic pain.

Immunology, allergic responses including tissue (host) rejection, acquired immunity and vaccinations, and rheumatology have drawn many research groups together and the problems have been studied from molecular, cellular and whole animal levels. Smallpox, as you know, has been virtually eliminated and the efforts now turn to hepatitis B prevention using an attenuated (formaldehyde) surface antigen, which is a modified form of a fraction of the causative virus. Pneumonia vaccine has been developed and work is progressing with Legionella (Legionnaire's disease) where older groups of patients are usually at risk. For those who travel abroad, work is going forward on vaccines against the pili or hairs of the diarrheal microorganisms, the problem being however that many different bacteria are involved from different parts of the world.

Exciting results are coming from the fusing of cancer cells that are immortal with mortal spleen cells that secrete antibodies. Such fusion products (hybridomas) express the characteristics of both types of cells so that we can grow them continuously and collect secreted, pure antibodies (monoclonal antibodies). These antibodies may be directed against malignant diseases, such as leukemias and lymphomas, but their usefulness, because of their high specificity, can be extended to the diagnosis of diseases and infections. The monoclonal antibodies are also being studied to transport drugs to specific cells with the expectation that side effects of drug therapy may be reduced. Monoclonal antibodies against drugs, such as theophylline,

are now used in home-analysis kits to determine the drug concentration in blood so that it can be maintained in the effective range but below the toxic limit. Increasingly we will find several laboratory determinations being converted to a finger-stick home procedure.

Along the lines of directed therapy is the use of lasers. Certain dyes (hematoporphyrins) are absorbed by cancer cells for longer times than normal cells. When treated with laser light these dyes cause the tumor cells to fluoresce and the dyes are activated to kill the cells. This technique is being applied to accessible tumors: skin, eye and lung. Alternatively, lasers of greater power are used to burn malignant growths, to reattach retinas and to treat some glaucomas.

We have heard recently of the replacement of organs. This has been most successful with joints, for example, the hip and fingers in particular. Work is progressing on the wrist, knee and shoulder. Other tissue replacements, together with the advances of microsurgery and alleviation of host rejection, have permitted transplants of cornea, heart, kidney, lung, liver, bone marrow, and pancreas.

Preventive Medicine

For all of this treatment of disease and the acute repair of tissues and organs from "accidents", the future of the health system must have prevention as a high priority. We are born with a predisposition to a quality of life that is programmed in our genes. Genetic engineering to correct an inborn error in the body is a long way away; genetic selection by in vitro fertilization is more feasible if the ethical and sociological aspects are not considered. Given what we are born with, then the controlling factors become the environment and what we voluntarily put into our bodies from foods, drugs and smoke. Accidents and pathogenic agents (viruses and so on) are now

treated medically, but some diseases we are trying to prevent. A few examples may be: obesity by caloric control; heart disease by diet; in-born errors by early dietary and supportive therapy (diabetes, iron excesses); in utero surgery using modern imaging techniques to deal with hydroencephalus; identification of carcinogens, mutagens, and teratogens to avoid further genetic damage.

Educational Planning

I have intentionally presented you with an array of technologies to exemplify the breadth of the basic information needed by the health professional. If there was ever a question of relevance for the prerequisites of health educational programs surely the answer lies in the explosion of applications from biology, physics, chemistry and mathematics. We have considered examples from the molecular biologies, such as genetics, recombinant DNA, hybridomas, membrane transport, receptors, metabolic errors/diseases; from physics, such examples as the imaging techniques, radiation therapies, spectroscopy; from chemistry, the molecular analyses of polymer conformations, in membranes, enzymes, hormone and drug receptors; and from mathematics there is the application of computer technology in image quantitation, location, data analysis and epidemiology statistics. Imposed upon these scientific technological foundations is also the need to understand and appreciate the human component of the patient and the health care deliverer. The areas of liberal studies must be served, the arts, philosophy, logic, and ethics; there are truly serious ethical questions raised in today's health care. How does one handle the teaching of this body of knowledge?

As is true in the area of national debt one can either extend the time to solve the problem, or become more efficient in the financial process or start early enough in the process so as never to get into debt. I would suggest

that from our need to solve the perceived educational debt it will be important to start the process of serious learning in the K-12 years, insisting that a better prepared student be admitted to the institutions of higher learning in the 12-16 years. This will take time and a commitment will be required on the part of the Boards of Education to support a broad based academic track.

In terms of efficiency of teaching I believe that all areas of study should develop their methodology by problem-solving. Real situations can be used so that the relevance of the facts used is immediately obvious and the inert facts are reduced to a minimum.

Finally I would appeal for these approaches to be made without reduction in liberal studies. In a three-year study by a committee of the American Association of Medical Colleges, directed to the training of the physician for the 21st Century, conclusions were reached that are applicable to all the health care professions. To paraphrase their findings:

1. Rapid advances in technology will continue.
2. The technology will become ever more complex.
3. Many factors determining health and illness are not only influenced by the health care system but are also consequences of life-style, environmental factors and poverty.
5. Patients will need advice on how to use the health care services.
6. Principal providers will be employed in HMO's or the like.
7. Ethical dilemmas will increase in complexity and intensity.

It is clear that a practitioner who is poorly educated in the liberal arts will not serve the patients or himself or herself well. We may not develop into a civilization of Methusalahs but we should be able to improve the quality of both living and dying.

SMALL GROUP SESSION

Advanced Technology

Facilitators: Burgess Shriver and Lois Hess

Summary of Workshop Discussions

* Advancing technology is permanent and will continue. It will impact on the total health care delivery system by forcing new attitudes and requiring that everyone be more flexible. Costs for care will increase because equipment will need to be replaced/updated frequently. More sophisticated technology will create more difficult ethical issues. These issues will need to be fully defined and standards of care developed from these issues.

* As technology advances, new skills are needed; how do we determine who will do them? We can not develop a new health occupations for each added technology. There needs to be a good understanding by employers and educators, maybe with the assistance of an occupational analyst, of roles of traditional health providers to determine who should be responsible for providing skill needed in the new technology. The question then is how do we train traditional providers for new technology: inservice, additional educational program, continuing education. How is it documented?

* It is difficult for educators to train students in high technology when they leave high school less prepared in the basics. Curriculum will need to include more theory on how technology works and students will need to be prepared for flexibility. There needs to be better articulation developed between high school and postsecondary; this will broaden the support system and there will be a broader base for the knowledge and skills required by students. Cross training adds complications because of

the time available to learn all skills needed, problem solving will need to be emphasized. Limited resources could force elimination of some of the high technical training, unless rental equipment and clinical resources can be better utilized for training. Buffalo, New York provides a permanent equipment center for students to get hands on experiences. (Might be a model for other states).

Recommendations

* There needs to be an organized way to provide health educators with knowledge and skills necessary to teach changing technology, to keep them current with the industry. It might be a good idea to require all health occupations teachers to have some clinical experience during every school year.
* Educational institutions must be selective on what programs to offer since start-up costs are great. They need to answer such questions as are they supported by the industry, and will the community support these programs?
* We need to teach students how to adapt to change since change with technology is so rapid. Suggestions included problem solving theories, role playing, etc.

MENTAL HEALTH CURRICULA CONTENT IN THE PREPARATION OF TECHNICAL AND VOCATIONAL HEALTH CARE PROVIDERS IN LONG TERM CARE FACILITIES

Mary S. Harper

Though it is a bit early to conclude the major impact on the health care delivery systems of the twentieth century, we already know that one of the major impacts will be long term care: the cost, quality, access and sites for the delivery of health care of the elderly.

There are approximately 20 million elderly involved in long term care.

Place/Site	Number of Elderly
Nursing Homes[1]	1.5 million beds with approximately 2.5 million elderly in and out of 26,817 nursing homes and related care homes last year
Boarding and Care Homes[1]	1.5 million
Single Room Occupancy (SRO)[2] Hotel/Rooms	1.7 million
Geriatric Adult Day Care Centers	13,500

Mary S. Harper, Coordinator, Long Term Care Programs, U. S. Department of Health & Human Services, National Institute of Mental Health

Place/Site	Number of Elderly
Homeless Elderly[3]	2 million
Rural Elderly	1 million
Elderly Living in the Community In Need of Assistance	3.6 million--of these approximately 2.7 million are over 65 with 1 to 4 chronic conditions
Primary Health Care Clinics	Estimated 3.5 million--of these, at least 30% are over 65
Respite Care	Estimated 1 million
Mentally Retarded Elderly	Estimated 1 million
Residential Facilities and Personal Care Homes[1]	114,704
Acute Hospitals/Medical Centers	12,000,000 episodes of admission of the elderly to acute hospitals and community hospitals.
Penal Institutions[4]	Percentage of persons over 65 increased 3.8% in 1962 and 4.8% in 1970
Hospice	1 million

There are 937 operating hospice programs and 4,120 are in the planning stage according to the National Hospice Organization (NHO). The NHO predicts there will be 6,800 hospice programs in the next ten years.

State/County Mental Hospitals[5]	120,000 (30% are over 60 years of age)
Mentally Ill[6]	2 million with serious mental

	disorders (20% are over 60 years of age)
Home Health Care[7]	2.7 million (62% of visits are to the elderly)

There are twice as many residents in nursing homes than there are in acute medical centers/hospitals, although the nursing homes do not have the equivalent in staffing. Revenue for the most visible long term care (LTC) provider, the nursing home, tapped $24 million in 1981 which is more than five times the 1970 level.[8] Health care expenditures in 1984 were $333.4 billion ($1365 for each person); of this amount $120 billion was spent for personal care for the 29 million elderly Americans 65 and older.[9]

Long Term Care (LTC) is the fastest growing segment of the U. S. health care industry. What makes someone part of the LTC population is not a paticular diagnosis or condition but the need for supportive service over an extended period. Supportive services for this population addresses a broad range of health, social and personal care needs of individuals who for one reason or another have never developed or have lost some capacity for self-care. LTC includes persons under 65 as well as persons over 65. Actually, what age is old in the United States varies with the legislation; in some legislation, the elderly is referred to as 45, 55, and 65. The elderly are satisfied with this spread because they do not want their entitlements, benefits and eligibility tampered with. The age spread was discussed at the 1981 White House Conference on Aging; the final decision was to yield to the desire of the elderly so for this paper I shall refer to the elderly which includes all of the spread above age 45. The increase in the number of elderly will not cease soon.

In the United States, actually 5,500 people celebrate their 65th birthday

each day. That is, about 2.0 million persons celebrated their 65th birthday in 1984. In the same year, about 1.4 million persons 65 or older died resulting in a net increase of over 560,000 (1550 per day). Over 12 percent of the U. S. population is 65 years or older (29.0 million in 1984). The number of older Americans increased by 2.3 million or 10 percent since 1980 compared to an increase of 4 percent for the under 65 population.[10]

Since 1900, the percentage of Americans 65 and over has tripled (4.1% in 1900 to 11.9% in 1984) and the number increased nine (9) times from 3.1 million to 28.0 million.[11]

The older population itself is getting older. In 1984, the 65-74 age group (16.7 million) was over seven times larger than it was in 1900, the 75-84 age group (8.6 million) was 11 times larger and the 85+ age group (2.7 million) was 21 times larger.[10, 11]

In 1984, persons reaching 65 had an average life expectancy of an additional 16.8 years (18.7 years for females and 14.5 years for males). A child born in 1984 could expect to live to 74.7 years, about 27 years longer than a child born in 1900. There is not just a graying of America, it is worldwide phenomenon. In 1983, the USA Census reported the biggest absolute gain in population in history. The world population reached 4.7 billion in 1982. In 1980 there were 375.8 million persons over 60 years of age. Between 1980 and 2020 (just 35 years) the 60 year old population will double although the world population will not double, the over 60 poulation will be 1.1 billion in 2020. Between 1980 and 2020, the over 60 population in the more developed countries (MDC) is expected to increase almost 116 million. However, the over 60 population in the less developed countries (LDC) is expected to increase 474 million (54.6% to 69.6% between 1980 and 2020).[12, 13, 14]

Long Term Care

Now that we have over 20 million people in the LTC system, what are our goals and strategies in doing something about their care. The goals of LTC include health promotion and disease prevention, increased longevity, enhanced independence, and enhanced quality of life. Strategies for LTC include delaying the onset of preventable disease in healthy adults, lengthening the period of functional indepencence in those elderly with chronic disease; and improving the quality of one's later life.

There are three major characteristics concerning illness in the elderly:

1. increased prevalence and incidence of certain conditions and disease,
2. non-specific presentation of problems, and
3. silent presentation of disease.

The average number of conditions increase with age with 2.9 conditions/disorders for the under 65 years of age group, 4.0 conditions/disorders for the 64-69 years old group, and 5.0 conditions/disorders for the over 75 years group.

Unlike the youth or younger adult, a specific organ, tissue or organism may be unveiled in the development of a disease. In the elderly, disease often gives rise to several non-specific problems which may be incorrectly identified as due to aging rather than disease. Some of these non-specific problems include falling, new incontinence, dizziness, light headedness, acute confusion, weight loss, depression, new onset or abrupt worsening of dementia, memory loss, irritability/impatientness, disturbance of gait, insomnia, increased sleep requirement, sudden change in personal appearance, sudden change in personality, and change in attention span.

Certain disorders are particularly likely to be obscured in the elderly and should be considered in perplexing clinical situations, i.e., pneumonia,

cancers, pulmonary embolism, drug intoxication, depression, and alcoholism. Therefore, these conditions should never be attributed to age per se. In the elderly we frequently have different disease presentation, altered clinical course, unpredicted responses, unexpected reactions to treatment, and unexpected outcomes. Definition of health for the elderly is defined as the

> ability to live and function effectively in society and to exercise self reliance and automony to the maximum extent feasible--but not necessarily total freedom from disease.

Critical to this definition are three characteristics: interdependence, live and function effectively, and self-reliance and autonomy.

Dr. N. Satrorius, Director of Mental Health for the World Health Organization (WHO) has indicated three levels of definitive care to be considered in defining mental health, namely:

1. Mental health is the absence of any well-defined mental disorder.
2. Mental health involves a certain reserve of strength in an individual which can help that person overcome unexpected stresses of exceptional demands and challenges.
3. Mental health is a state of balance between the individual and the surrounding world, a state of harmony between one's self and others, a coexistence between the realities of the self; that of other people, and that of the environment.[15]

Such a state of balance can quite easily incorporate disability, health equilibrium can also exist in the presence of disease. Health and disease are then orthologinal dimensions of existence rather than real opportunities.

Contrary to common belief, older people have fewer mental diagnoses than other age groups. According to recent studies at the National Institute of Mental Health (NIMH), 9,000 non-institutional persons 65 years and older were

found to have the lowest rates of all age groups for eight disorders (affective disorders, panic and obsessive/compulsive disorders, substance abuse and/or dependence somatization disorders, antisocial personality disorders, schizophrenia and phobia) and a related disorder, cognitive impairment.[16, 17] The primary mental health problem of the elderly is the result of cognitive impairment. The NIMH studies found mild cognitive impairment in adults, 14% of elderly males and females and severe impairment in 5.6% of elderly men and 5% of elderly women. Alzheimer's Disease is the leading cause of cognitive impairment.

Diagnoses such as schizophrenia and manic depressive psychosis are not frequently seen as diagnoses of the elderly in the nursing home. If more than 50% of the nursing home residents have a primary psychiatric diagnosis the home is considered an IMD institution for mental diseases. Reimbursement in an IMD by medicare and reimbursement is not available.

Some of the common emotional, mental, and behavioral problems of the elderly and the aging are

1. Cognitive impairment,
2. Depression/sadness/feelings of unworthiness/hopelessness,
3. Dementia (senile dementia of Alzheimer's type) (SDAT),
4. Anxiety disorders,
5. Sleep disorders,
6. Confusion,
7. Delirium,
8. Loneliness/lonesome,
9. Wandering,
10. Memory impairment,
11. Restlessness,

12. Organic brain syndrome,

13. Suicidal impulses/attempts,

14. Social breakdown syndrome (SBS),

15. Emotional problems associated with poor physical health,

16. Paranoid delusions,

17. Alcoholism,

18. Apathy, and

19. Dizziness.

Major sources of stress in later life include work (12%), economics (16%), self (20%), family (21%), and health (31%).

Mental health providers and consultants must be accessible to the primary care physicians, primary nurses and vocational technical workers in surgi centers, emergi centers, ambulatory centers, as well as in the acute hospital. One recent study showed that 80% of elderly who received ambulatory care services for mental disorders did so in a general medical setting.[18, 19]

Many of the mental disorders of the elderly are unrecognized. In a study of patients over 65 admitted to a university general hospital, 79% of cognitive deficits were missed by the examining physician. In 394 examinations of 165 patients, only four mental status examinations were recorded. A clear cut cognitive deficit was predictive of later acute episodes of confusion. One must remember that a very high percentage of delirium and at least 20% of dementia is indeed treatable.[20]

Mental impairment/disorders are frequently unrecognized in the elderly in the community as well as in institutional settings. One hundred seventy-six (176) homebound elderly (125 females) with a mean age of 77, and of whom 99 lived alone had been referred for psychiatric assessment by family physicians or a community agency. Their status was assessed by a geropsychiatrist in

their home. The most common discrete psychiatric diagnoses were dementia (84) with and without secondary symptoms, major depression (46), and paranoid states without dementia, (12). Social and environmental problems were identified 87 times. Home management with psychotropic drugs was instituted for 85 patients and without psychotropic drugs for 33 patients. Acute hospitalization was necessary for 51 patients. Clearly, psychiatric assessment in the home is feasible and indeed, provides a variety of unique procedures/advantages in the home.[21]

I have cited these three incidents which focus on one of the major problems of the elderly getting comprehensive mental and physical assessments. It is a matter of time, knowledge, attitude or ageism?

Providers of LTC

Providers of long term care can be divided into two general categories: nursing staff and medical and allied professions. The total nursing staff[22] includes 664,900 (82.8%) persons divided into nursing aide 462,900 (59.0%), licensed practical nurse 97,500 (12.5%), and registered nurses 84,500 (10.9%). Medical and allied professions include physicians 14,700 (1.9%), dentists 3,300 (0.4%), pharmacists 11,900 (1.5%), dietitian/nutritionist 13,200 (1.7%), and other professionals 8,700 (1.7%). Although there are almost a half million employees in nursing homes, they are very understaffed and in many instances underpaid. Let's look at a few facts:[22, 23]

80-90% of care in nursing homes is given by nursing assistants/aides whose pre-service training is generally 0-6 months.

the educational range of the aide is 7th to 12th grade

the average salary for the aide is $350 per month

The turnover rate for the aide is 75% per year[24, 25]

A recent survey in California reports that an average turnover of service

staff in long-term care facilities was 240% during 1978.[26] Another study showed that 90% of the facilities surveyed had a turnover rate of 14%.[25, 27] There are no standard requirements for training aides and only 17 states require certification and/or license.[22, 25]

Almost half of the nursing homes do not have 24 hour coverage by a registered nurse. One study reveals that the average nursing home patient receives direct care by a registered nurse a total of 12 minutes per day in a skilled nursing facility and only 7 minutes per day in an intermediate care facility. A recent survey in California indicates that physicians spend less than half a minute per day with the average nursing home patient.[26]

In 14,000 patient assessments, efforts were made to identify the needs of over 8,000 patients. It was found that the aide spent 25 minutes in the least intense group of patient activities --dressing and feeding patients, etc; and 104 minutes in the most intense group of patient care activities--incontinence, bathing, feeding, etc. The overall mean length of times was 52 minutes for all 1,615 patients cared for in the study.[23]

In summary, we have a lot of elderly people who need institutional and noninstitutional care. At a hearing sponsored by the U. S. Senate Select Committee on Aging[25] and the House Committee on Aging,[7] the burden of LTC is frequently left to untrained and unlicensed workers. Physicians and nurses are marginally involved. However, there has been a slight increase in the involvement of physicians, nurses, social workers and psychologists.[28,29,30,31,32]

It is reported that 75% of the institutional LTC of the elderly is provided by aides and 75% of the noninstitutional LTC is provided by members of the family. There is a minimum of organized effort to train these providers, to assure safety and quality of care or to monitor the delivery of care. We still have a lot of ageism in some of our health disciplines.

An Ecosystem Approach to Understanding Aging and the Preparation of LTC Providers

LTC in the United States is very fragmented, seldom integrated, seldom comprehensive, and provides little communication to the elderly and among the various provider groups. Because of the many physical, social and emotional problems, there are generally 5 to 17 different people involved in their care at any given time. Unfortunately, there's very little communication between disciplines and between institutions/programs (hospital, ambulatory care services, private dentist, podiatrist, internist, cardiologist, et al.). Sometimes iatrogenic condition occurs as a result of lack of communication among providers.[33]

While there are a multitude of studies describing aspects of LTC and aging, we lack an integrated model that can portray a holistic picture. There are over 100 different services (ambulatory, respite, services for the blind, services for hard of hearing, legal counseling, hospital, adult geriatric day care, state mental hospitals, rehabilitation centers, senior centers, congregate home care, visiting nurse, podiatry, chore services, emergency care, sheltered employment, nutritional counseling, wellness centers, braille services, acute hospitals, medical equipment loans, legal counseling, mental health counseling, et al. Therefore, we must have an ecosystem perspective which integrates the numerous disciplines and divergent services and viewpoints that will shape our understanding of the aging process. This model relies heavily on the prior works of Bronfeubrenner[34] and Belsky[35] who have used the ecosystem to increase our understanding of human development and behavioral health problems.

This approach/model is based on the following assumptions:

1. Aging is a developmental process that is heavily shaped by the

environment/family-friend system/ecological context in which it occurs.

2. The experience of aging is jointly determined by forces at work in the individual, forces at work in the immediate family network (micro-system), forces at work in the larger social system in the elderly and family are embedded (ecosystem) and the forces at work in the culture at large (macrosystem).
3. These forces representing layers of the ecosystem inevitably produce changes (often unintended) in other layer of the ecosystem.
4. Understanding the problems of the elderly or making an intervention must take into account the forces at all levels of the ecosystem.
5. The elderly in USA are beset by a multitude of problems ranging from declining physiological capabilities to loneliness, physical and mental abuse, and cumulative cognitive deficits. In combination and cumulatively, these problems serve, for many elderly, to transform the golden years into one of despair and personal hardship. Therefore, care and coping strategies must be developed that will assist the elderly to cope with the multiple decrements associated with the aging process, while maintaining independence and a good quality of life.

Forces of the macrosystem including ageism; inflation; decreased support for social services, instability of entitlements (i.e. social security); poverty; pension policies; and retirement policies. Forces of the ecosystem include availability/access to quality health care, access to transportation, access to home health services, access to recreational opportunities, availability of adequate housing at an affordable rate, and community involvement. Forces on the microsystem include presence of access to family, family or friend system

(there are 8 million elderly who are alone); quality, frequency and nature of family relationships; past family conflicts; family burn out; and prior history of crisis management.

In describing the older person, one must take into consideration his/her lifestyle, fixed income, racial and ethnic heritage/impact of societal attitudes, personality, self esteem and life satisfaction, increased life expectancy, ageism, limitations in activities of daily living, capacity for handling of stress, role changes and family losses; and an increased psychopathology and chronic health conditions with age.

Long Term Care Curriculum

Therefore, a curriculum for the preparation of vocational and technical health care providers in LTC should aim at the following:

1. To provide understanding of the important relationship between the individual aging process, the immediate family and social network, and the broader economic, political and social systems in which the aging process occurs.
2. To provide the worker with basic skills and knowledge necessary to care for the physical and emotional needs of the elderly.
3. To provide the worker with knowledge and techniques for preventing excessive disabling, encouragement of self care, promotion of healthy lifestyle and the maintenance of independence.
4. To provide the worker with basic knowlege and techniques for group work.
5. To provide the worker with skills necessary for interdisciplinary team work.
6. To provide skills and techniques of observation, assessing, reporting and recording.

7. To provide knowledge of family and community resources.
8. To develop strategies for intervention in psychosocial problems with the elderly.
9. To identify the scope of factors and/or changes which increase stress in the elderly.
10. To develop understanding and how to intervene with such behaviors/conditions and dementia, depression, loneliness, feelings of unworthiness, common losses, suicidal ideation/attempt, hostility, aggressiveness, assaultative, wandering, etc.
11. To provide ethnic of care (privacy, freedom of information, informed consent, rights of the elderly, policies of the institution/agency, safety of care, prevention of accidents).
12. To identify the nature, course of chronic illnesses; impact of chronicity on the patient, family and the health care provider.
13. To provide an understanding of the impact of LTC institutionalization (nursing homes, hospice, state/county/ hospitals, home care, etc.).

In the preparation of a vocational and technical worker in LTC, the initial training should be for two to three months. The preparation should include classroom and clinical supervised experiences in the classroom and the clinical setting. It is preferable that the same instructor provide the classroom instruction and the clinical supervised experiences. The instructor should have a scheduled conference with the head nurse weekly. The head nurse, the trainee and the instructor must participate in the assessment of the learning experiences and the preparation of the trainee. The preparation of the trainee should include supervised experiences on the evening and night tours of duty. Selected experiences should be assigned in community health

centers, such as the community mental health centers and adult geriatric day care center, etc. The technical and vocational worker should not be depended upon to provide services while in training. All members of the clinical team should be involved in the preparation of the technical and vocational worker in LTC. The trainee must know the mission of the institution or agency and exactly what is his/her role and limitations in the implementation of the mission.

The primary nurse instructor and other leaders of the training programs should have special preparation in adult teaching of adults, preparation of teacher made test; methods of enhancing the transfer of learning and implementation, supervisory skills and knowledge, and special knowledge in the area of clinical competence which she's teaching.

In response to the Institute of Medicine recommendation, I am recommending that we explore as one option the preparation of technical and vocational health care providers in the community and junior colleges for LTC. In 1978, there were only 524 associate degree and baccalaureate programs with 37,000 students.[36]

In addition to the general didactic and clinical evaluation, there should be a mental health component. The mental health curricula content should be a part of the training of all technical and vocational health care providers (TVHCP) in LTC. Through continuing education and advanced programs, additional preparation may be gained for such areas as remininsce group work/therapy, reality therapy, remotivation techniques and skills and therapy, case management,[34] and discharge planning.[37] The mental health curricula content in the preparation of technical and vocational health care providers in LTC should include the following categories:

I. Orientation and objectives addressing the

A. Mission of the agency, institution/program/clinic/center;

B. Legislative mandates - involving the technical, vocational health care provider (TVHCP);

C. The role and requirements of the TVHCP;

D. Demographic profile of aging and long term care of the elderly in the USA and abroad; and

E. Brief history of the scope, nature and challenges of LTC for the TVHCP.

II. LTC

A. Quality of care issues;

B. Access and availability of clinical and social services; and

C. Scope and characteristics of mental health, mental illness, emotional, social, behavioral and mental disorders with implications for the TVHCP.

III. Techniques, strategies and processes for observation reporting and recording.

A. Confidentiality,

B. Privacy,

C. Accountability, and

D. Respect.

IV. Role, function and limitations of the TVHCP

A. Duties;

B. Hours;

C. Work schedule;

D. Entitlements;

E. Rights, privileges, responsibilites and limitations;

F. Opportunities for career advancement; and

G. Relationship with patient/resident family and community.

V. Chronicity/LTC

A. Definition/concepts;

B. An overview of the research fundings and implications for the TVHCP;

C. Precipitation, contributory and predisposing factors; and

D. Factors contributing to excessive disability and maintenance of chronicity.

VI. Assessment--specific to the elderly with emotional behavioral mental disorders and the chronic mentally ill resident

A. Activities of daily living;

B. Work history: implication for intervention;

C. Support systems of family, family friend systems, and community (Resident's perceptions and use of the social support systems, the caregivers, the care giving setting);

D. Perception of health status/insight and coping capacities;

E. Assessment of cognitive and coping functional ability and capacities and limitations;

F. History of compliance to medical regime, deterrents to compliance, enhancers of compliance;

G. Health education techniques and processes;

H. Assessment of physical and health status;

I. Psychological assessment;

J. An overview of selected assessment instruments which do not have to be administered by a psychometricians: their uses and limitations;

K. Using assessment input from the patient/resident/family and

other disciplines;

L. Functional assessment; and

M. An overview of selected clinical biomedical laboratory assessment i.e., urinalysis blood test, glucose tolerance test, x-rays, EEG, EKG, KATZ scan, etc.

VII. Methods of Intervention

A. Assessment of the psychosocial ecological systems (environment, patient, family and social and political system)--use the ecosystem approach as previously discussed in any intervention on any level of care;

B. Techniques and skills for working with the elderly--consider limitations/assets of mobility, wisdom, memory, learning, patience, intolerance, safety, prevention of falls and injuries;

C. Working with individual residents;

D. Working with groups of residents and other team members including the family;

E. Psychodynamics of behavior and personality, and coping styles, etc.;

F. Case management such as function, limitation, techniques, evaluation procedures and processes. (NOTE: long term goal--to eliminate or reduce the frequency, intensity and duration of the symptoms of aggressive and distripic behavior, know when to seek consultation of psychiatrist, physician, nurse, psychologist/social worker or the administration leadership);

G. Supportive individual/group therapy;

H. Adult geriatric day care centers; and

I. Psychotropic drugs--their use and limitations/side effects including drug/drug interactions, drug/food, interactions, and administration of oral drugs.

VIII. Behaviors, characteristics, predisposing, contributory and precipatory factors, interventions, management and safety

A. Confusion or disorientation

Description: inability to answer questions regarding time, place or person--make irrelevant responses to questions; inappropriate behavior as to dress, delusions, hallucinations, impaired judgment, reduced attention span, recent loss of memory, and free floating ideas may be found. Many elderly persons with these symptoms have had a diagnosis of dementia of the Alzheimer's type (SDAT), chronic organic brain syndrome or ischemic cerebrovascular disease. However, these symptoms may be due to drug interaction (drug intoxication). Polypharmacy is very common among the elderly. The elderly are frequently on 4 to 17 different drugs--therefore, the risk for drug toxicity is very high.

B. Hostile verbal or physical behavior which may be active or passive. Description: include yelling, spitting, angry vocal outbursts, self-abusive acts, destruction of property, belligerent, hostile, manipulative, combative with staff or residents, homicidal or arson. Use of physical restraints, chemical sedation, nursing interventions, supportive psychotherapy. These symptoms may also be due to alcoholism, neoplasm, trauma, chronic toxic encophalopathy (due to dehydration, endocrine disease, metabolic-nutritional

deficiency, or poisoning).

C. Feelings of hopelessness and unworthiness.

D. Depression or apathy. Description: a reduction of fructification varying in degree from unhappiness to low self esteem. Depression might mimic Alzheimer's Disease. Observe for suicidal attempts. Provide supportive psychotherapy and safe environment.

E. Delirium.

Long term goal is to improve the patient orientation and ability to perform activities of daily living, minimize risk of injury or being injured, improve memory through memory training and involvement in group activities. Develop a patient care plan through the use of the team conference and team implementation/ evaluation. Assess progress recordings and mini mental status scale.[38]

IX. Wandering Patient.[39]

X. Inappropriate Dependence. Description: unnecessary reliance on or demands for assistance from staff or family members for the performance of activities of daily living (often may be attempts of manipulation) the resident may use unneeded assistive devices (e.g., cane, wheel chair or medication).

Innovations may include psychological and social assessment of status of self image and self esteem; review of life patterns of coping strategies, establishing and maintaining relationships; ability and inability to make decisions; motivational level; and medication review.

XI. Mentally retarded elderly

A. Overview of mental retardation;

B. Profile of psychosocial need of the mentally retarded elderly;

C. Behavior problems (e.g. biting, assaultiveness, confusion, wandering, delusional, and hostility);

D. Periodic assessment of self care skills and mental status;

E. Provision of emotional support, reassurance;

F. Behavior modification techniques; and

G. Monitoring drug outcomes.

XII. Psychotic or new psychotic conditions or drug/alcohol dependence.

Description: Psychoses included here are major thought disorders with derangement of personality and loss of contact with reality, often with delusions, hallucinations or ideas of reference. Other problems such as borderline psychosis: schizoid, antisocial or narcissistic personality disorders fall into the near-psychotic conditions. Drug alcohol dependence refers to the acquired addiction or habitation of narcotics or other drugs (including alcohol) that stimulate or depress physiologic or mental activities.

XIII. Social Isolation/Loneliness/Lonesomeness

Description: Limited social interaction with others in the immediate environment for reasons other than lifestyle choice. Sensory deprivation, lack of visitors from outside the facility, immobility, behavioral problems, terminal illness, or physical condition such as odor from colostomy may contribute to the isolation. Assessment of self image, mental status, hearing and vision, and family relationship.

XIV. Anxiety

Description: A feeling of uneasiness, apprehension or impending

doom. Somatic symptoms may include palpitation, cold sweats, tachycardia, hyperventilation, dizziness, faintness, anorexia, nausea or diarrhea.

XV. Bowel and Urinary Incontinence

A. Causes

B. Prevention

C. Care of decubitis

NOTE: retardation, confusion, disorientation, medication (drug to drug interactions) could contribute to incontinence

D. Nursing assessment: elimination habits, stool (color, size, and consistency), fluid intake, stress and mental status, presence or absence of pain/gas, impact of drugs.

XVI. Nursing Care Plan and Nursing Care Conference

XVII. Discharge Planning

A. Scope and use, information and referral

B. Patient - family education

C. Transfer of services to another agency/center/clinic

D. Monitoring and supervision of care in the home

E. Community resources for resident/patient and family

F. Working with the family, team and other community agencies

XVIII. Suicidal behavior

A. Suicidal potential and

B. Intervention with suicidal behavior.

In conclusion, better training is needed for TVHCP, physicians, nurses, psychologists, members of the family, significant ones, society, politicians, legislators, administrative leadership, physical therapists, occupational therapists, pharmacists, dentists and investors in order to improve the

quality of LTC and improve the quality of life for the elderly. Mental health services must be provided wherever the elderly are, be it in the home, center, hospital, nursing home, or penal system. A special committee[29] has recommended that the goal for the number of health care providers to be trained by 1988 should include 1,000 psychiatrists, 2,000 clinical psychologists, 4,000 psychiatric nurses, and 18,000 nurse aides and related personnel and para-professionals.

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SMALL GROUP SESSION

The Aging Population

Facilitators: Katy McNally and Sharon Lesan

Summary of Workshop Discussions

* Society still continues to isolate the elderly with the average age of 87 years in long term care and increasing yearly. The elderly will continue to have more chronic diseases than the general public and therefore continue to spend more of the health care dollars. The elderly of the future will be very different, more independent, more oriented to wellness and prevention. More care will be given in the home as a result of DRG's. Families will need to have some respite care available to maintain their mental health. Congregate living facilities will increase with the need for personnel to provide services.

* To make effective changes in the condition of the elderly, those of us who care need to become more politically involved--the political arm needs to be as strong as the educational arm. Many felt there needed to be a disaster to get standards, etc. improved for the elderly. Elderly have psychological and financial limitations as well as physical, such as driving to the doctor or doing their own banking, etc. These need to be addressed as much as the physical limitations. Elderly abuse is beginning to become recognized--17 states have laws dealing with reporting and dealing with physical abuse.

* The State of Connecticut has a good law for credentialling of home health aides. Seventeen states have credentialling for aides working in long term care to assure some type of quality. STEP (Services to Elderly Persons) include persons certified as geriatric nursing assistants, home health aides and homemakers.

Recommendations

* All curricula for health occupations personnel should be reviewed and revised to include indepth knowledge and skills for working with the elderly. Independence for elderly should be an important part of the curriculum as well as preserving the elderly's dignity and providing comprehensive safe care. These curricula should be aiming toward elderly as a market for their graduates. Practical nursing curricula should be redesigned to include a greater component on geriatrics.
* We need to expand our knowledge about normal physiological and psychological characteristics of the elderly. There is a strong possibility that what is normal for general population is not normal for them.
* There needs to be stress management programs for those who provide care for the elderly as there will be fewer numbers of personnel available to provide care for the elderly.
* Skilled care for elderly should be medicare and medicaid reimbursable.
* Public health nurses need retraining to upgrade skills in assessing and providing care for elderly.
* Directors of nursing homes and home health care agencies need a strong background in geriatrics to improve the care provided by these agencies.
* There should be third party coverage for dental care as there are increasing dental needs due to retention of teeth.

WELLNESS THEME OF THE 80's

Chris Schreurs

Kevin Israel

The Wellness Program at Des Moines Area Community College (DMACC) is five years old. The program has taken a different slant in the last two years as we have changed the image and our philosophy. We believe that Wellness is many different things and that each individual asked to describe wellness would have a different response. With that in mind, we decided there are two things that are important to all of us: happiness and fun; so we started building our program around these two ingredients. Let me list for you what we feel are the necessary components of a successful program.

1. Support from your President, CEO, Vice-presidents, or deans, in other words support from the top. I mean visible support, not just verbal. If the staff is to become involved they need to know that the Boss supports the program from the beginning to the end. Encourage your people to get involved, let them know you care about them.

2. Financial support from the institution in addition to membership

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Chris Schreurs, Coordinator of Recreation/Wellness Services, Des Moines Area Community College; and Kevin Israel, Recreation Assistant, Des Moines Area Community College

dues. Our program started with seed money from the College and we are fortunate to still have that support. Our membership dues are $48.00 per year, or $20.00 per semester. We also have the payroll deduction method, $2.00 per paycheck on a 24 paycheck period, 99% of our membership is on this method. Our business office is very cooperative and we are given a computer list each month of the payroll deduction members. This service is available for full-time staff only.

3. Be able to beg! If you can't beg you will never make it in this business. Do whatever you have to in order to get people to your events, especially in the beginning. Once they realize how great you are and what you have to offer, it will be easier to get them the next time.

Getting free speakers and free handouts are other places to utilize your best groveling skills. I would much rather use my money for incentives and instructors than speakers.

4. Trust is essential! The employee needs to know that you have something creditable and that you will follow through with what you say. Employees also need to know that whatever is told to you medically will stay with you.

5. Communication! Tell them and tell them often. Be a part of your new employee orientation program, use bulletin boards, special invitations, and pictures. (We take pictures at every event, people love to see themselves.) We print a weekly column in the staff newsletter called the Wellness Corner, this keeps people updated as to events. We also print a monthly newsletter, the Apple Gram. This publication runs 10-12 pages every month with features like Chris' Kitchen featuring healthy recipes, Fitness Fact of the Month, Nutrition Tip of the Month, Kevin's Korner with activities planned for the month. This is a great way to communicate and we mail this to

all staff, not just Wellness Members.

6. Practice what you preach! You can't expect participation in your Stop Smoking Program if they know you puff. Take part in your exercise program no matter what it takes, let them see you sweat. It's very hard to always be up but people expect that so keep smiling and be enthusiastic.

7. Continue to be Creative! Don't ever let yourself be satisfied with your program. Be flexible and be willing to make whatever changes you have to in order to make the program work.

We had a Point Challenge Program for Wellness when I came to the department. It was BORING and the prizes were ugly. We slowly phased out this program and created the Apple of My Eye (See Appendix A). There are two parts to this program: the employee of the month (one male and one female) and the Total Points Program. After points are totaled each month, we award an incentive and present it at our monthly Lunch and Learn Program. Last year it was coffee mugs with our Apple of My Eye logo; this year it is umbrellas. We take picture and make a big production of the event.

8. Lastly, constantly evaluate what you are doing and ask the staff their opinions of what you are doing. This helps you to know what they like and what they dislike. Believe me, they will tell you.

Briefly, some additional comments about our program at DMACC.

Exercise and Fitness Classes Co-ed classes are open to both staff and students. Before anyone is allowed to exercise, they must take a fitness test or bring in a physician's release. We offer Low Impact Aerobics, Toning and Tuning, Walking Club, Jazzercise, and Weight Training. We have four classes on Monday and Wednesday, and five on Tuesday and Thursday, lasting for 45 minutes each.

Lunch and Learn: L & L's are scheduled the third Friday of every month. It

is a healthy low calorie lunch (cost is $1.50 for members and $3.00 for non-members) followed by a speaker. Different topics are presented each month from speakers outside the college, most come free or ask mileage. This has been an extremely successful program with an average of 55-60 people attending every month. Occasionally, a door prize is offered at this event. Door prises range from theater and concert tickets to basketball game tickets, tickets to the circus or a cruise down the river on a riverboat.

Blood and Medical Screen: The screens are offered each year in February, on campus, free to Wellness Members with a nominal fee for non-members. Spouses are encouraged to attend.

In addition, Wellness sponsors several clinics: Stop Smoking, Alcohol and Drug Awareness, Weight Watchers, which meets once a week on campus for staff, Cross country skiing, Tennis and Golf lessons. These clinics are brought to the work site to make it easy for staff and students to be healthy and involved!

In conclusion, I'd like to say that in case you haven't picked up on it, Kevin and I really love our jobs and our enthusiasm for our work seems to rub off on our program. Remember: Wellness doesn't have to be all work and no play, a combination of the two will assure your success.

Appendix A

"Apple of My Eye"

The Wellness Employee of the month incentive program is back with new prizes, so if you were "hard working and healthy" enough to be an "Apple of My Eye" last year, wait until you see what we have this year. This program along with our year long program is designed to assist you in working toward a total lifestyle in ALL AREAS OF WELLNESS--exercise, nutrition, health screens, and more.

Points are based on participation in an activity and/or duration of that activity. Participants will record their points after each activity. All records will be kept in the Recreation/Wellness Services office in Building #5. These points will accumulate MONTHLY, points must be turned in the first Monday of the month, following the month you earned them. If not turned in by this deadline you will not receive the points for that month. We apologize if this seems a little harsh, but for record keeping purposes we really find this to be a must. Thanks for your help in this matter.

Kevin will again be keeping the running point totals on the I.B.M. so it will be easy for you to know where you are. The program for the Big prizes will run from October 1 thru May 1.

Following is a list of points and the incentive gifts available to you.

500 points	Coffee mug
750 points	DMACC Staff Wellness beach towel
900 points	DMACC Staff Wellness Polo shirt
1200 points	DMACC Staff Wellness Sweatshirt
1500 points	Walkman
1700 points	Pulse Watch or Cat Eye Speedometer

Attached is the listing of points and how they can be earned.

DMACC Wellness

Participation In:	Points
Lunch and Learn	10
Each exercise class attended (each 1/2 hour)	5
Individual exercise done at DMACC (each 1/2 hour)	5
Shedding 5-8 pounds per month	10
Maintaining ideal body fat	10
Completing a Stop Smoking Course	25
Keeping a food diary for two weeks (must hand in to Recreation/Wellness office)	20
Bringing a friend to DMACC to exercise	5
Bringing a non-Wellness staff member to a DMACC Wellness Activity	10
Monitoring blood pressure each month with Campus nurse	10
Monitoring and controlling blood pressure with Campus Nurse	20
Taking individual fitness test	10
Being a captain of an IM sport	10
Participation in CPR Certification course	25
Participation in a new sport or hobby	5
Cheering your favorite IM TEAM	5
Becoming a new Wellness Club Member	25
Not using a sick day for a month	10
Stress Management: attending a movie, watching television, doing a hobby, family outing, reading (30 points max), going to the theater, attending a workshop, etc.	5

SMALL GROUP SESSION

Wellness: Theme of the 80's

Facilitators: Dennis Cryer and Beverly Kukowski

Summary of Workshop Discussions

* Discussions on the curricular impact of changing philosophy in the health care field which is emphasizing education and the treatment of the total person, e.g., physical, emotional, social, sexual, and spiritual dimension, and the promotions of wellness-oriented health enhancing behaviors in each dimension as well.
* Many, including health providers, look at wellness as play and do not allow time for wellness practices.
* There is a need for much greater emphasis on self-responsibility for public so they have ownership of the programs. Fitness is only one component of wellness, be sure public does not relate all of wellness with physical activity. Emotional wellness is as important and directly impacts physical wellness.
* The public should be taught to ask questions about wellness activities such as the cost of fitness centers and benefits, the qualifications of teachers and directors of wellness programs or centers, and whether programs will help change lifestyle or are they only faddish in nature.

Recommendations

* Health occupations curricula should be evaluated to include as much on wellness as on emergency intervention and treatment of illness. Topics should include a component on physiology of wellness, health promotion at the work site, health promotion for elderly. Skills that will be needed include: communication, assessment, referral, process management, decision-making, self-concept promotion, motivational and application of

values and ethical principles, e.g., autonomy, justice, informed consent, benficence, etc.

* All secondary students should have a course on health education. In secondary health programs, it is the responsibility of the instructor to encourage students to investigate pre-professional health programs that include wellness in the curriculum.
* Wellness education should not be based on the traditional medical model used in most health occupations curriculums. Health students/ professionals should examine attitudes, knowledge and skills, how to practice these and to teach others in a manner that is reasonable and that will reach others.
* Health occupations students in secondary and postsecondary programs should educate their peers.
* Programs should be creative; designed to interest the population that one is trying to reach using effective marketing techniques.
* Start with short term achievable goals and work toward long range goals.
* When starting on a program to educate the public, be sure there are sufficient resources available. Work toward getting medicare to pay more on prevention. Have them include wellness tips in social security check.
* Head start programs should have a wellness component.
* Use churches to offer wellness programs.
* Support elderly as role models for own age and younger groups.
* Use A.A.R.P. to support an active wellness program for elderly.
* Programs should be included at work in form of employee benefit programs.

BUILDING TODAY FOR A BETTER TOMORROW: PROBLEMS AND PROSPECTS FOR HEALTH OCCUPATIONS EDUCATION IN THE 21st CENTURY

Mary M. Randall

"For I dipt into the future, far as human eye could see, Saw the Vision of the world, and all the wonder that would be; Saw the heavens fill with commerce, argosies of magic sails, Pilots of the purple twilight, dropping down with costly bales . . ."[1]

This verse from Tennyson's poem "Locksley Hall", published in 1842, could inspire anyone who looks to the future and who welcomes changes. It should inspire us to use today to build a better tomorrow.

How can those of us in health occupations use today to build that better tomorrow? How can we chart our course for a better future? First, we must review some of the issues and conditions of today that are impacting health occupations education and the health care industry. Then, we can consider the actions, activities, or solutions they suggest for our better tomorrows.

Mary M. Randall, HOE/AVA Vice President, and State Supervisor of Health Occupations Education, Oklahoma State Department of Vocational-Technical Education. Assisted by Todd Zdorkowski, Research Specialist, Oklahoma State Department of Vocational-Technical Education

Health Occupations

If I were asked to select one word to describe health occupations education and the health care industry today, that word would be change. Someone asked John Naisbitt, author of MEGATRENDS, "Are things going to get better or worse?" and his response was, "Neither, things are going to get different."[2] I agree. I believe that we have the greatest opportunity we have ever had to influence the nation's health care delivery system. I must admit, however, that this opportunity is a direct product of the massive changes occurring in our society and in our traditional health care system.

Let me address some of the specific changes we face. Claire M. Fagin, Dean of the School of Nursing at the University of Pennsylvania in Philadelphia has stated that, "The health care system in the United States is in the midst of a revolutionary change. The language of change includes such words as [high technology], cost containment, deregulation, diagnosis related groups [and] preferred provider organizations . . . However, the real change is a change in ideology spurred by the privatization of health care services."[3]

Some of the other changes cited by Ms. Fagin include: declining mortality rates (mortality rates have declined rapidly for all ages and both sexes), higher morbidity rates (morbidity rates from infancy through old age are higher and the health profile for middle-aged and older people is worsening), a rapidly aging population (12% of our present population is aged 65 years or older), escalating health care costs (in the past 5 years, health care costs have risen at a rate almost three times that of general inflation rate), and the institution of the Prospective Payment System (PPS was implemented in October, 1983).[3]

Another significant change, and one that has serious professional and

political consequences for us, is the attitude of people toward the health care delivery system. The health care industry is becoming strongly privatized and is challenging the idea that health care is a public good that should be available to all Americans regardless of their ability to pay. Aging Americans, for one group, challenge this strongly and have organized themselves to fight against increasing privatization.

Health Occupations Students

Let us now take a look at some factors related to our student population: let us look at their health and their demographics. Thomas Seessel, Executive Director, National Council on Alcoholism, has alerted us to a major, new student health problem. He describes adolescent alcohol abuse as one of the country's "most devastating epidemics". We have 100,000 ten and eleven year-olds who get drunk at least once a week, and this abuse is occurring at an earlier and earlier age among our students. He estimates that 3.3 million teenagers in the United States have serious alcohol problems today.[4]

Susan Orbach is the author of Hunger Strike, a book in which she describes anorexia as a "metaphor for our time, [a metaphor for the] deep conflicts and contradictions characterizing our moment in history: starvation amid plenty; denial against desire; . . . [and] an obsessive need to control one's own body". The National Association of Anorexia Nervosa and Associated Disorders estimates that 10% of our college women are beset by anorexia and/or bulimia; and that the present number is climbing.[5] How are we to respond to this sort of self abuse? How can we treat such active pathologies? We might well ask how we can treat more passive pathologies such as physical fitness.

The President's Council on Physical Fitness and Sports states that "the physical fitness of young Americans has shown little improvement in the last ten years, and in some respects has greatly deteriorated; many children simply

aren't getting the vigorous exercise they need . . . what's particularly distressing is that poor fitness now could have serious long term medical consequences for a youngster later on."

We must now ask ourselves some questions. Are health occupations educators prepared to deal with these problems? What are we doing to help our students now? What can we do to help them in the future?

The makeup of the nation's classrooms and workplaces is changing rapidly and will continue to do so. Many of these changes are related to simple demographics. Higher percentages of minorities are entering our classrooms and workplaces and an older population now confronts us as well. Other changes are the result of changing social patterns. We now see many more women in the work force, larger numbers of single-parent families, and a greater number of early retirements. Whatever the causes of these changes, new demands are being placed on our educational system. For example, we will have to be increasingly responsive to minority students, to adult learners (who have now reached record number), to the poor, and to the at-risk children who are being raised in single parent families. Again, the implications for us in health occupations education are tremendous.

Special Problems: Elder Abuse

As previously mentioned, 12% of our population is now over 65 years of age, and their growing numbers are significant for health occupations education and the health care industry. Beyond those numbers, however, is another factor which is worthy of consideration and on which there has been limited research done. This is elder abuse. Although the quality of elder abuse research varies and as a result, its projections and diagnoses vary, elder abuse appears to be a significant social and medical problem in the United States. In 1979, Lau and Kosberg found that 9.6% of the elderly

admitted to the Chronic Illness Center in Cleveland, Ohio over a 12 month period showed signs or symptoms of elder abuse. Of these, 74% showed signs or symptoms of physical abuse or neglect. The pathologies that Lau and Kosberg reported include four kinds of abuse: physical abuse, psychological abuse, material abuse and violation of rights.[7]

O'Mallely, et al. reported similar findings. About 50% of the questionnaires returned from Massachusetts' legal, medical, and welfare professionals suggested that physical trauma was the dominant form of elder abuse in that state and a surprising 40% reported debilitating mental anguish as a major form of elder abuse.[8] The United States House of Representatives' Select Committee on Aging reported that 50% of a sample selected from a study area in Florida showed signs or symptoms of physical abuse as well.[9]

Taken together, these paint a rather disturbing picture. But it is a picture that we should be able to change! How can we do it? How should we train our students to cope with these problems, and what forms of service should they deliver to the aging or the infirm?

Solutions?

Now that we have reviewed some critical issues facing us today, what are some of the actions, activities, or solutions that we should consider if we want to have a better tomorrow?

Adaptation

In the first place, we must learn to adapt to change ourselves, and then we must teach our students how to change. We can use our experiences in adapting to change, to prepare students for new work during their working life. The experts say that this is a vital key to survival in the job market of the future. John Naisbitt sums up the attitude he thinks a student should have toward change and job training: "In a world that changes so fast, the

most important things for students to learn is how to learn."[10]

Planning

Another critical response that we must make while adapting to change, is to plan for change. We must plan for a health occupations education that is exciting, dramatic, state of the art, high tech, bold and breath-taking. Of course, we must always keep in mind our primary objective: meeting the needs of our students and those of the nation's health care industry. We must, however, meet their new needs with new methods, new excitement and enthusiasm.

Simultaneously, we must be willing to do the cold, analytical work that will help us to determine our responses to the future. We must plan our responses, and structure answers to the questions we are unable to answer today.

Integration

One major institutional challenge that we must meet to create a better tomorrow is the challenge of fragmentation in education. Sidney Marland, former United States Commissioner of Education, has conducted an energetic campaign on behalf of integration in education. He finds that: "Education's most serious failing is its self-induced voluntary fragmentation . . . the strong tendency of education's severed parts to separate from one another . . ."[11] Many of us have tried to lay aside the formal distinctions between academic, vocational, and general education which are crippling our educational efforts and most of us agree that academic and vocational education should not be in conflict. Each is important. They are complementary. Neither teachers nor students should be confronted with the questions of either/or. Education should be a matter of both/and. Would you not agree that we must work to eliminate the fragmentation in health occupations education?

Industrial Partnerships

One major response that Health Occupations Educators can make to a better tomorrow is to develop better partnerships with industry. Tomorrow's health care workers are in our classrooms today. The skills that these students develop, and the attitudes toward work that they are acquiring today, will determine the performance of the health care industry in the 21st century.

Peters and Waterman's book, In Search of Excellence, has strong implications for health occupations education. The authors say that a business must "listen to the customers' advice, respond to the customers' requests, and keep in mind the importance of the customer."[12] Who is the customer for our products, for health occupations education graduates? The health care industry. "Let's listen to the health care industry: we must know what our "customers" believe they will need.

Teacher Preparation

Now, let us address the last and what I believe is the most critical of all issues I have chosen to address: that is teacher preparation. Our current practitioners are our change agents. The amount of data that addresses teacher training, the qualifications of good teachers, and the criteria for evaluating effective teaching is overwhelming. The report, Investing in our Children, goes so far as to say: "We are calling for nothing less than a revolution in the role of the teacher."[13] This is a sweeping statement, and the authors go on to support it by addressing such issues as compensation, career development, working conditions, and teacher education. I believe these issues are also of primary importance for health occupations teacher-training, and they are issues that we will have to address anew.

Gordon Cawelti, Executive Director of the Association for Supervision and Curriculum Development, believes that one method of improving teacher-training

lies in the specialization of teachers. He states, "As one examines the various large bodies of knowledge that ought to guide student learning, it becomes clear how impracticable it is to expect all teachers to know everything."[14] Mr. Cawelti suggests that pay incentives could encourage individual teachers to extend their training in professional specialties, and he has identified such possible areas of specialization as diagnostician, learning specialist, student evaluator, technology specialist, and staff development specialist. Most of us are able to teach facts, but how many of us are really proficient in and comfortable with the methodology necessary to teach and evaluate thinking skills? How many of us can systematically teach analytical skills? Wouldn't it be helpful to have a learning specialist available who is an expert in this methodology? Should we, as health care educators follow the established path into greater and greater specialization? Or, should we attempt to produce other abilities in our teachers? I am not sure which approach the future favors.

Before I close, I would like to mention a very new source of data available to health occupations educators - so new in fact that only one edition has been published. Of course, I am referring to the first copy of our very own HOE/AVA Journal. My congratulations to our Editors, Dr. Beverly Richards and Dr. Norma Walters, and to all those who have contributed to the first issue. I commend them, and the Editorial Board, for the high standards which they have set for this publication. I also encourage those of you who are not subscribers to become so in the very near future. Your participation in this project and your support will assist us in the dissemination of professionally relevant information.

Summary and Conclusion

Tennyson's words serve as a constant reminder of an important belief:

the future holds great promise for those who think rather than daydream about it, for those who plan rather than wait for it, and for those who accept rather than reject the inevitability of change. We must anticipate and welcome change. We must introduce new concepts and ideas into our practice and we must devote time to planning for the future instead of living in the past or wasting it on the present.

The present day problems that I have described are only a sample of those that confront us. I have not spoken of AIDS; I have not spoken about our response to the nationwide epidemic of drug abuse or drug abuse within the health care industry; and I have not spoken about the opportunities for entrepreneurship in the health care industry.

All of these have implications for both Health Occupations Education and the health care industry. Neither have I answered all the questions that I have addressed. Many of these questions have no answers at this time, while others generate conflicting responses from people with differing values. Some of the questions can be answered only through time and through our own hard work.

To achieve our goal of quality health occupations education and health care, we must do as Tennyson did and dip into the future as far as the human eye can see. We must look into the 21st century, assess what lies ahead, and build today for a better tomorrow.

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FUTURE DIRECTIONS OF HEALTH CARE AND HEALTH CARE EDUCATION

Catherine B. Junge

Previous speakers have referred to the changes in health care and you have had a chance to react to their presentations. Later speakers will speak to you on various topics related to health care education and you will have another opportunity to react to these presentations. I do not plan to repeat what you have heard previously nor to anticipate what you will hear in future presentations. Instead, I will give you a brief look at some of the things I see for the future. I will consider four different areas: institutions offering health care provider programs, the student population of these programs, the curriculum or course content and assurance of quality in health care provider programs.

The Institutions

Institutions can be considered in three categories: general education institutions, health care service agencies and others. Historically, the preparation of health care providers took place in apprenticeship programs--a one on one type of training. This is a costly program in terms of training time involved and the low student-teacher ratio. Later, as hospital use

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increased, training programs moved into the service agencies, primarily hospitals. Gradually, in this setting education began to be separated from health care services. In addition, the public began to question the wisdom and fairness of charging sick persons, the hospital patients, with the cost of preparing health care providers.

Gradually, programs began moving from service agencies into the main stream of education. This movement continues today. The latest data from the U. S. Department of Labor and the National League for Nursing indicates an increase in nursing programs in colleges and a decrease in hospital-based programs. Data from the U. S. Department of Health and Human Services indicates the same trend for other health professions. Health care service institutions continue to be involved in specialized training programs and in providing the clinical component of provider education programs. A strong cooperative agreement is needed between educational and health care agencies.

A trend has also developed toward housing different levels of preparatory programs in different types of educational institutions. (For the sake of brevity arbitrary divisions have been used and statements made in generalities.) Professional preparation (four or more years) takes place in colleges and universities. Technical preparation (up to two years) takes place in community/junior colleges or technical institutes. Vocational preparation (up to one year) takes place in vocational-technical centers, adult education centers and community/junior colleges.

There are other training sites, including: military installations and correctional institutions. (As health care becomes more dependent upon technology, it is possible to train and utilize persons who do not come in contact with the patient/client, e.g. dental laboratory technician and biomedical technician.)

Predictions

The trends toward housing basic preparatory programs in general education will continue. Health care service agencies will continue to be involved in providing training. As they are less involved in preparatory programs, they will be more involved in specialized training. They will provide basic training when a small number of special technicians are needed, e.g. dialysis technicians and sonographers. Training for new and emerging occupations will take place in the service institutions as needs arise. The health care agency may enter into cooperative agreements with nearby high schools, adult center or community college whereby the trainee receives didactic training at the school and on-the-job training in the service institution. Health care service institutions will also be involved in advanced training in specialty areas and in continuing education.

Another area coming into prominence is re-training. Employers are under increasing pressure to end the cycle of laying-off employees whose skills are outdated and hiring new trainees. More employers will be involved in re-training existing employees as one type of service is phased out and another service is begun or expanded.

The Student Population

The student population will differ from the present day student population in several ways. There is evidence of the end of the baby boom. There are fewer students between 18 and 25 years of age. Health care provider programs, professional to vocational, are competing for students with more popular and glamorous career programs. Enrollment in dental and pharmacy schools is down and the ratio of applicants to slots in medical schools has changed from ten to one to two to one. Women students, the primary source of health care provider students, have many more choices today.

Predictions

There will be more minority students. Public school population is predicted to be 50% minority by the year 2000. This change will be reflected in health care provider educational programs. More students will have English as a second language. Many students will come from an economic and/or culturally deprived background.

Students will be older. The average age of community/junior college students is now 28 and expected to rise.

The number of generic (first time) students will decrease with a corresponding increase in the number of students moving up the career ladder. The move toward articulation of programs will continue its impetus due to competition for students. Persons who have successfully completed a short term preparatory course will be encouraged to upgrade their skills and advance to a higher occupational level.

More students will be part time. Those who have credentials from a vocational program will be working to support themselves and pay for further schooling. With the shortage of workers, generic students will easily find employment to support themselves or to assist their parents with educational expenses while in school.

Many students will enroll who are making career changes. Either their previous occupation has been phased out or they are making a career change for personal reasons. Indications are that the average worker will make four or five major career changes within her/his working life. Another factor leading to career changes is the two income family which makes job changes less traumatic than for the family with only one income.

Curriculum/Course Content

Presently, curriculum developers are frantically playing catch up with

the many changes in health care technology and in the health care delivery system.

Predictions

There will be more use of educational technology: computer assisted instruction, auto-tutorial courses and simulation. There will be increased competition for clinical training slots. Instructors will be innovative in arranging for clinical experiences in alternative training sites, such as: ambulatory care centers, geriatric day care centers and health maintenance organizations. Students will be prepared for clinical experiences through simulations in the laboratory.

Cooperation between educational and service institutions will increase, making instructional programs more relevant. Schools will use cooperative or work study programs to provide students with additional clinical experiences during summers and non-school days.

Problem solving will be included in the curricula at all levels. Problem solving not only helps students take responsibility for their own learning, but also equips students to meet rapid changes in technology. The day is long past when a student learned everything there is to know during the basic training period.

Assurance of Quality

There is a great deal of concern among health care providers, educators and policy makers about maintaining the quality of care in changing health care settings. They are asking, How is quality care assured in homes or in adult day care centers?

Predictions

Standards for care will be set through cooperative efforts of government agencies, federal and state; professional associations; financers of health

care; and health care service agencies. In the future, basic program accreditation will move into the main stream of educational program accreditation. Credentialling of advanced and specialized health care providers will continue to be provided by independent agencies.

Summary

This presentation has looked at the trends in health care and health care education and has made few predictions of the future course. Four categories were considered: institutions offering the training, the student population, curriculum/course content and assurance of quality programs. Only time will judge the accuracy of the predictions.

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HEALTH CAREERS FRAMEWORK AND MODEL CURRICULUM STANDARDS

Beverly Campbell

The Health Careers Framework and Model Curriculum Standards are part of California's response to the Nation's call for educational reform. California's Superintendent of Public Instruction, Bill Honig, is urging academic reform and Governor Deukmejian has demonstrated his support by the signing of Senate Bill 813 pumping millions of dollars into the state educational reform efforts.

California State Department of Education's first effort was the development of a California Assessment Program (CAP), a series of test questions used to measure students' academic achievement. The second effort was the development of Model Curriculum Standards: Grades 9-12 intended for use as a basis of comparison for academic program content and methods of operation. The third effort was the development of the Secondary Schools Program Quality Criteria, which provided the specifics for measuring program and school site effectiveness. Vocational Education was included, for the first time, in the quality criteria documents. A team of field representatives was trained and certified to provide the on-site assessment

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using the quality criteria document. Since Vocational Education was not included in site and program assessment, it became clear the Model Curriculum Standards would be necessary for measurement.

Development Process

The process began in the Fall of 1985. Five curriculum coordinators were selected. Based on advisory committee input, the coordinators designed the Model Curriculum Standards format and determined the extent of the content to be included. Twenty-five subject matter experts were selected and divided into eight writing teams. The first draft of the materials was reviewed by more than 50 teachers who would be potential users of the materials.

Revisions were made and a second field review occurred at the annual statewide health careers educators conference in May, 1986. The final drafts were edited, reviewed by industry representatives and more than 300 copies have been disseminated for a six month field test.

Purpose

"It is the unique function of education to prepare students with life and employment skills . . . Combining abstract academic learning with applied learning will give concrete, meaningful, and useful learning that will be helpful to millions of young people and adults in the decades ahead." from the Association of California School Administrators (ASCA), Position Paper, Vocational Education Committee, October 16, 1985.

These model program standards were established to assure that health careers education provides a program of instruction that meets the needs of all students seeking a career in health care; are of the quality and rigor necessary to reinforce, enhance and expand academic skills; and insures that students, successfully completing the courses, have competencies at a level necessary for successful employment or for receiving credit as additional

levels of education are pursued.

Rationale for a Health Careers Program

> The Legislature hereby recognizes that it is the policy of the people of the State of California to provide an education opportunity to every individual to the end that every student leaving school should be prepared to enter the world of work; that every student who graduates from any state-supported educational institution should have sufficient marketable skills for legitimate remunerative employment; and that every qualified and eligible adult citizen should be afforded an educational opportunity to become suitably employed in some remunerative field of employment. . . California Education Code 51004.

The health care industry is in a period of rapid growth and change. New types of patient care facilities are being created on a regular basis. Many health care facilities and institutions are considered "cities" within themselves offering a myriad of employment opportunities. Because of this diversity and opportunity for employment, the health care industry is often considered as providing a career option for everyone. Career upward mobility is possible and encouraged by health care providers and employers. Through completion of a health careers education program, students (high school and adult alike) can find employment or continue their educational preparation toward advanced employment goals.

Use of the Standards

The health careers model curriculum standards as developed provide a model by which courses of instruction can be measured for currency, completeness, rigor, methods and other criteria indicative of quality education programs. In concern with health care industry advisory committees, the model curriculum standards also may be used for program planning and

implementation, determining curriculum revisions and ascertaining if current course offerings should be continued, expanded or deleted. Content within the model encourages continued and expanded education/industry partnerships. These partnerships are often cited as essential for a quality health careers education program.

Program Approach

The Health Careers Education Program Framework and Model Curriculum Standards present the program approach to health careers education and recommend educational paths that students may select if they are interested in a career in health care.

What's new? The program approach is new. A series of student outcomes are combined to make up sequential courses of instruction resulting in a health careers education program. Decision-making points are identified at designated intervals throughout the program. The "Introduction to Careers in Health Care" course is new. It is designed to be offered for sophomore and junior students or as an adult education course to introduce students to the more than 200 careers available in health care.

Decision Point #1. The five occupational cluster core courses are new. After reaching decision point #1, students select a cluster and complete outcomes common to all occupations within that cluster.

Decision Point #2. Students may articulate laterally to a different cluster core course or may select an assistant level occupationally specific course. Students completing this specific course reach the third decision point.

Decision Point #3. Students may elect to go directly to the job for which they have received training, complete a second assistant occupationally specific course expanding career options, articulate to a technical level occupationally specific course, or articulate into a community college or

university level health care program. At any decision point along the way, students may determine that health care is not their career choice and at that point may exit and explore other career-vocational fields.

Expected Results

The expected results of the program approach for health careers education are:

1) increased career and job mobility in a rapidly changing industry,
2) health care employees who have researched and assessed their career goals and will be committed employees,
3) more effective utilization of teaching staff, physical facilities, and community-based learning experiences,
4) greater interest in the academic program for high school students who have identified and are pursuing personal career goals,
5) increased vocational course enrollments and retention,
6) closer partnerships with the local health care industry, and
7) closer networking and cooperation between instructional personnel.

Critical Program Components

Integrated Learning

Research has shown that retention of skills and knowledge learned throughout the educational experience are increased markedly as the variety of presentation methods are increased. Combining abstract academic learning with the applied learning that occurs throughout the health careers education program provides concrete, relevant experiences resulting in increased academic proficiencies of the graduate.

Academic Skills Infusion

Expansion, reinforcement, and enhancement of academic skills and knowledge previously acquired occurs throughout the courses. Health care

industry employees have responsibilities that require exacting skills in computing, communicating, interpreting, and understanding. There is little margin for error in this field; thus, the academic rigor of the courses must prepare students for these employment requirements.

Community Learning Experiences

Upon completion of prescribed didactic instruction and laboratory exercises during the occupationally specific courses, students expand their knowledge through a community learning experience in a health care setting. Skill Proficiency is attained through community-based practices provided through cooperative health care industry/education efforts.

Employability Skills

Employability skills prepare students to seek employment once the occupational skills and knowledge have been acquired through the selected occupationally specific course. Additionally, the content (i.e., job application completion, resume writing, presenting one's self in a professional manner) can enhance students' opportunities for placement in medical or dental schools or other professional level education programs.

Student Outcomes

Each course is comprised of sequential units of instruction. Each unit includes a student outcome statement that describes the competencies the student attains upon successfully completing the unit of instruction.

Content

Each course includes a) unit outline, b) description, c) recommended delivery system, d) teacher qualifications, e) industry involvement, f) suggested supplies and equipment, g) resources and references, and h) career guidance outcomes. Each unit page (see Appendix A) within each course includes a) rationale, b) student outcomes, c) integrated academic skills, and

d) representative activities. Academic skills reinforced through the health careers as identified by units of instruction are displayed on matrices matching the unit of instruction to the academic standard from the Model Curriculum Standards, Grades 9-12.

The Health Careers Model Curriculum Standards program approach is currently being piloted at a single site in California. It is anticipated that by using the results of the pilot, the remainder of the programs will adhere to the new standards by the 1990 school year.

Appendix A

NURSING OCCUPATIONS CORE

Unit 11 - Emergency Procedures

Rationale:

Knowledge and skill of emergency procedures often means the difference between life and death, temporary or permanent disability, rapid recovery or long-term hospitalization. It is critical that the health care worker is knowledgeable and prepared to respond in emergency situations.

Outcome Statement:

Students are aware of the importance of steps to be taken in an emergency and the proper procedures to be carried out in order to avoid serious injury to themselves or the victim. They are able to call for emergency help and care for victims in an emergency until advanced medical care arrives.

Integrated Academic Skills:

* BIOLOGICAL SCIENCE
  BS 6, 7, 10, 17

* LANGUAGE ARTS
  L 15, 19, 20, 23

* MATHEMATICS
  M 13

* PHYSICAL SCIENCE
  PS 11

* WORLD HISTORY, CULTURE & GEOGRAPHY
  WHCG 10

Representative Activities:

* Read incident reports

* Return demonstrations as an evaluation method for practical competency of steps to be taken in an emergency

* Practice emergency care procedures using simulated emergency situations

* Large group instruction by lecture, discussion, overhead and question and answer session

SMALL GROUP SESSION

Updating Teaching Technology

Facilitators: Beverly Richards and Larry Hudson

Summary of Workshop Discussions

* Discussion was centered on the following nontraditional teaching models: audio only or telephone conferencing, audiovisual with television and telephone, audiovisual with computer ties between students and teacher, interactive video, video tape, and computer assisted instruction. Application of models and methods or overcoming obstacles was discussed. To overcome obstacles the human and sociological factors need to be considered.

* Constraints of the models centered on initial costs, time required to organize and structure the nontraditional program, meeting the needs of the different learning styles of students, providing some hands on experiences, overcoming teacher and student biases, library resources are often a problem for off campus courses, student support services often are not available, on site coordination is difficult, e.g., testing, materials and supplies needed for each class, and it is especially difficult in working with students with special needs, e.g., shy student or one who needs special considerations.

* The strengths of nontraditional models include the ability to teach students at multiple sites, and providing easier access with less cost in time and money. These methods are efficient when you have people scattered over a region or state who need a class, but not in sufficient numbers to justify an on-site class, e.g., teacher certification courses.

Recommendations

* Provide an inservice presentation for instructors on the use of these

models.

* Use the models to provide greater flexibility in scheduling clinical facility meetings when students are using multiple clinical sites throughout a region or state, continuing education programs for special professional group, courses required for advanced degrees, e.g., associate degree nursing to baccalaureate programs, specialized secondary classes for small high schools who do not have teachers or resources to offer diverse courses on site, and courses for general equivalency diploma, vocational training or associate degree can be provided to a prison population prior to release.

MULTICOMPETENCY: THE ILLINOIS EXPERIENCE

Archie G. Lugenbeel

Model Overview

In the rural setting of southern Illinois there was a need to develop an educational design strategy that was different if the region was to have adequate health care personnel. From this standpoint the decision was made to develop what is now called the multicompetency technician.

The model developed utilized three allied health specialties--medical laboratory, respiratory therapy, and radiography. The difference was that all students would choose any two of the three for their multicompetency choices. Each specialty covered approximately one year along with seventeen semester hours of science and support courses.

The model, funded by HEW (1974-1979), was developed, implemented and tested over a five year period. As part of the summative evaluation, the Resource and Advisory Committee recommended that the program be redesigned on the basis that there be one major allied health category and one minor. Since 1980 this multicompetency approach has been carried out at Southern Illinois University's (SIU), School of Technical Careers (STC).

Archie G. Lugenbeel, Dean of Health Sciences Technology, Trident Technical College

The Story

In January and March 1974, the administration of SIU/STC and the region's hospital administrators set about to impact upon the area's health personnel shortage. For instance, the personnel need at the time for formally educated staff showed that in medical laboratory 80 percent were on-the-job trained; in radiology 63 percent were OJT's; and in respiratory therapy 95 percent were off-the-street trained. Even though there were shortages in other allied health areas these were the specialties chosen for this effort.

A proposal specifying the area's needs and the strategies to be used to impact upon those health personnel education needs was submitted and received funding approval in July 1974. Besides attempting to ameliorate the area's personnel shortage problem, the position taken by the Bureau of Health Manpower was to "develop and test a model educational program suitable for replication in other rural areas."

The Resource and Advisory Committee of RAHMP, made up of hospital administrators, educators, health care professionals, and comprehensive planning agency personnel, developed the following project strategies.

Target Population - gear the training to the indigenous, rural population likely to stay and practice in the areas, especially those considered non-traditional students;

On-Site Training - make the training component accessible and convenient to the trainee by providing effective, on-site training, where and whenever possible;

Individualized Learning - make extensive use of specially developed allied health instructional media and clinical facilities;

Competency Development - aid the trainee to become an allied health generalist while obtaining educational credentialing; and

Resource Sharing - establish the health and education resources in the service area in an appropriate mix.

To implement these strategies, five staff members were selected: the project director, a medical technologist, a radiographer, a respiratory therapist, and a science/math instructor. The project director was responsible for the overall developments of the project, while the health and science specialists were responsible for their specific technical specialty areas. Their duties included curriculum development, materials selection, course sequencing, and student evaluation. The latter included both didactic and clinical review and assessment. In addition, each of the 11 participating hospitals assigned a training site supervisor in each specialty, though not all sites used all three skill areas.

In order to implement the multicompetency concept of "two skill areas embodied in one technician", the American Medical Association essentials for medical lab, x-ray, and respiratory therapy were used. In lab the one-year certified laboratory assistant and the one-year respiratory therapy technician essentials were used. In x-ray, since there was no one-year curriculum, the radiologic staff using a variety of nationally recognized curriculum development materials and hospital radiology department input instituted a one-year curriculum that met the needs of hospitals of 150 beds and less.

To test the concept and produce qualified allied health staff, 11 hospitals were used in a 31 rural county area of southern Illinois. The hospitals ranged in size from 47 to 170 bed capacity. The average size was 76 beds. Thirty trainees were selected and chose the following allied health specialties combination:

	1st Choice	2nd Choice
Med Lab	10	10
X-ray	13	9
Respiratory Therapy	7	11

Of these initial trainees, 25 completed the "dual-training" sequence, while five withdrew after completing their first choice.

The overall results according to the final report (Lugenbeel 1979) of the five year educational research effort on the development and potential use of SIU's "dual-trained" allied health personnel approach were:

- 100.0 percent completed one specialty
- 83.4 percent completed two allied specialties
- 93.3 percent worked full-time (2 not working for family reasons)
- 62.1 percent worked in hospitals in which trained
- 39.1 percent were utilized as dual-trained technicians

The results, therefore, demonstrated that: (a) individuals trained in the rural setting tend to stay in their communities; (b) not all individuals want or prefer dual training; (c) the smaller hospitals tended to use the dual-trained individual in their multi-capacity, especially those below 75 beds; and (d) the concept is viable but its acceptance and use is hampered within the medical/hospital community because of its organizational structure.

In the last quarter of the project the RAHMP Resource and Advisory Committee arrived at three major recommendations, which were:

1. Go to a Major/Minor training arrangement rather than the full dual-training as tested;
2. Articulate with the area's community college for the science/support courses; and
3. Move the allied health specialties toward fully accredited status.

This is where SIU/STC is today. Each student in the rad tech and the respiratory program declare a major and a minor (med lab was not approved for State funding and is no longer part of the allied health offerings). There is linkage with nine community colleges and the programs are AMA accredited. Based on internal data approximately 300 students have matriculated into these two major/minor arranged programs and some 240 have graduated. Thirty percent or more of the graduates are working on SIU/STC bachelor's degrees in Health Care Management or the College of Education's Occupation Education degree.

The Next Step

What does the future hold? For SIU/STC, the future holds continuance of the major/minor multi-skill concept with linkages and personal and professional advancement through career laddering. If the Blayney and Bamberg (1984) study is any indicator, physical therapists, occupational therapists, medical technologists, and dietitians want additional skill capacity. What I call -- skill enhancement. Multiple competency, if you will. The study points to "add-on", a basic skill (specialty) with expanded capabilities.

But what of the future -- the year 2000 that is? World futurists and others are indicating the following:

- Heavy use of robotics and sophisticated design devices that will
  - continue to revolutionize manufacturing
  - invade the fast food market
  - change the design and work in the office
  - artifically program themselves
  - diagnose and prescribe health care prevention and treatment (a "Doc on a Chip")
- Careers and jobs will change and these may become

  Data Base Managers for medical records

Laser Technicians medical and non-medical

Space Technolgists for orbiting hospitals and pharmacy labs

Ethicists (professional humanist) as values determiners and hi-touch listeners

Digital Technicians for medical and non-medical automated equipment

Educationists for life long training/education and retraining

Geriatricians for health, leisure, and well-being

Computer Psychologists someone has to listen to them when they go off the deep end.

Multicompetency, skill enhancement, you name it, it is with us. The present and the future is adding impact to the versatile individual. The one who can continually rise to the occasion, regroup, and go forward. The Southern Illinois story and the Alabama model exemplify a changing career market in the health field.

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RESTRUCTURING THE HEALTH CARE LABOR FORCE: THE RISE OF THE MULTI-SKILLED ALLIED HEALTH PRACTITIONER

Keith D. Blayney

Some changes in the way health care is delivered are without precedent: out-patient services have been broadened; some types of health personnel are no longer in high demand; deliberate cost-cutting systems increase daily; and doctors are again making house calls. More than half of the nation's hospitals will experience an operating loss in FY 1986-87. Allied health manpower must also change, and the most promising changes lie within the multiple competency concepts.

Among the names given multiskilled allied health practitioners are skill-enhanced health workers, multiple competency clinical technicians (MCCTs), and expanded skilled health practitioners. The multiply competent professional can perform functions extraordinary to the expectations of his/her discipline. These functions (skills) have been considered the turf of another categorical discipline. For example, medical technologists might be taught to take routine radiographs or to work in respiratory therapy. The intent behind multiple competency is not to encroach on the legitimate realms of other allied

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Keith D. Blayney, Dean, School of Community and Allied Health, University of Alabama at Birmingham

health or nursing personnel but to organize the work environment so that more tasks can be performed without the awkward assignment of a variety of overly specialized people. Hospitals, health maintenance organizations (HMO's), and others in health care delivery can no longer afford the luxury of underemployed staff.

If the idea of multiple competency is so timely, why is it not more widespread? Among the obstacles are (1) human nature's resistance to change, (2) established disciplines that oppose the threatening encroachment, (3) allied health and nursing schools, encouraged historically by federal grants and by their accrediting agencies to train only the specialized technicians specified in allied health manpower acts, and (4) accreditation. No established multiple competency associations exist to accredit programs, nor has an accreditation process been devised by AMA's Committee on Allied Health Education and Accreditation (CAHEA). This difficulty will persist, because the definition of the multiply competent technician will vary from one work environment to another. Specific terms will be necessary to identify each type of multiply-competent technician, and the curriculum must be specified to enable CAHEA to accredit training programs.

Dr. Wallace Clark of the CAHEA supported the need for more versatile allied health professionals (Clark, 1980). Dr. Clark surveyed 250 hospitals throughout the United States in 1979 and concluded that multicompetency technicians are important components of the health care delivery team and that hospitals and physicians would consider hiring multiskilled technicians if they were available. The bottom line is that it is financially more feasible to hire these technicians, especially in those areas most cited as needs by physicians: nursing, laboratory, electrocardiogram, medical records, patient education, vision testing, x-ray, pulmonary function testing, and audiometry.

This study also showed that about 70% of the responding physicians employed persons with skills overlapping two or more allied health disciplines.

Because the marketplace has decided that multiple competent health manpower will exist, there is little need to further justify multiple competency. For-profit hospital corporations, HMO's, preferred provider organizations (PPO's), prospective payment systems (PPS's), and the current emphasis on out-patient care have created an environment that supports more broadly trained health workers. In the School of Community and Allied Health (SCAH), for instance, we have decided to produce health administrators who hold a dual degree in both health services administration and business.

These developments may be threatening to many in the established allied health professions. Many fear that their hard-won place in the health care hierarchy will be eroded with multiskilled workers, or that quality of health care will be compromised, or that jobs will be lost because employers will hire the "cheaper" worker. In reality, several allied health professions are in danger of becoming obsolete if they cannot keep pace with rapidly changing health care delivery, technology, and payment systems. At SCAH, for example, we see more and more graduates take part-time jobs as inpatient census drops in area hospitals. Our medical technology programs are undergoing serious reevaluation as hospital laboratories reconfigure. In the last several months the Appalachian Regional hospitals have laid off medical technologists and closed some laboratories.

Our faculty has begun to discuss the possibility of a combined medical technology and radiologic science curriculum. If allied health faculties do not think in these terms, before long their graduates will not find full-time jobs. Employers are contracting for services and are no longer hiring individual health professionals in the numbers previously expected. Services,

not individuals, are in demand. With a fixed payment system, employers are analyzing more carefully the tasks that must be performed and are contracting for only what they find absolutely necessary, at the lowest price. For example, hospitals may contract for rehabilitation services but not for physical therapy, occupational therapy, or speech and hearing (Table 1). This has encouraged service contractors to employ multiskilled workers.

The time has passed when American health care delivery can afford the luxury of inefficiency. Despite the barriers established by accreditation, certification, licensure, or policy statements by any group, changes in the direction of multiple competency are coming and will occur.

The American Hospital Association is committed to the exploration of the multiskilled practitioners and, in fact, has scheduled two regional programs to be held in Minneapolis, Minnesota, October 20 and 21, 1986, and in Hyannis, Massachusetts on October 23 and 24, 1986. The programs have four purposes:

1. More clearly define the term multiskilled, multicompetent, or multicredentialed.
2. Identify skills that might be combined successfully at both the technical and professional levels.
3. Describe model programs that could be replicated by educational institutions and health care facilities.
4. Clarify the application of the concept in the health care setting to encourage acceptance of and support for the multiskilled practitioner.

If you are interested in the outcome of these meetings, please contact Barbara Bloom Kreml at the Department of Human Resources, American Hospital Association, 840 North Lake Shore Drive, Chicago, Illinois 60611, Phone (312) 280-6117.

Table 1.

Combinations of Skills Identified by Employers as Meeting Their Needs

1.	Nursing + limited respiratory services + laboratory tests (i.e., in urgent care centers), radiologic skills
2.	Physical Therapy + Occupational Therapy
3.	Radiography technology generalized to a greater degree rather than the current specializations + ultra-sound
4.	Secretarial in laboratory area + phlebotomist duties
5.	Medical technology + more microbiology skills
6.	Cardiovascular laboratory + x-ray + respiratory therapy
7.	Purchasing + pharmacology
8.	Radiography + laboratory technology
9.	Nuclear medicine + x-ray technology
10.	Arterial blood gas studies + risk management
11.	Medical records skills + risk management
12.	Nursing + infection control + employee health + education and training
13.	Dietetics + patient education (e.g., exercises, diet)
14.	Purchasing + materials handling + transport
15.	Operating room + recovery + intensive care unit
16.	CEO + financial administration skills

From analysis of answers to questionnaires completed by 47 health services administrators, August 16, 1985, and March 12, 1986. Health Services Administrators Development Program, School of Community and Allied Health, University of Alabama at Birmingham, Birmingham, AL 35294.

References

Clark, Jr., W.G. (1980). Survey presented at the November 18-22, 1980 Annual Meeting of the American Society of Allied Health Professions in Memphis, Tennessee.

SMALL GROUP SESSION

The Alabama Model

Facilitators: Shirley Muehlenthaler and Larry Dahl

Summary of Workshop Discussions

* The Alabama Model is based on the medical assisting curriculum. In addition to the competencies required for medical assisting credentialling, students have an opportunity to acquire related skills in more depth. Concerns the group had about the model included:

  quality of patient care, how can it be assured, are we expecting too much from one person;

  how does the multi-competent provider relate to the traditionally prepared health provider;

  who supervises them, where do they fall on the organizational structure in the health care facility;

  educationally, who would teach them, how would faculty be credentialled, what documentation would be required for verification of competencies; and

  would industry be better able to assess their own needs and train their own multi-competent personnel?

Recommendations

* Rather than marketing traditional health programs, could educators market expertise in curriculum and instructional development; helping the industry assess needs, prepare appropriate personnel and document the skills of these personnel.

* The concept of the multi-competent technician is sound if it is to provide an individual with the competencies to function, not only within a narrowly defined traditional area, but in a more general way, as

specifically required by individual agencies.

* The models, which have been presented, were designed to meet specific local needs and were not intended to be universal; however, these models could be used as points of departure from which other models could be developed.

MARICOPA COMMUNITY COLLEGES' APPROACH TO HIGH SCHOOL/COLLEGE ARTICULATION

John L. Bradley

Articulation of high school and college occupational programs was mandated by the Arizona Vocational Education Act of 1982. Articulation is . . . the coordination of programs so that students can progress without duplication of time, effort, or expense to themselves or taxpayers. The Maricopa Community Colleges now have more than 170 Articulation Agreements with eleven different Maricopa County High School Districts. High school graduates may receive college credit for more than 100 different Maricopa County Community College District courses.

Articulation occurs in stages. Articulation Agreements are negotiated during Stage One and students enroll in college during Stage Two. While there are obvious benefits to everyone involved, the most significant return to the Maricopa Community Colleges will be increased enrollment of competent full-time students.

Articulation involves administrative and academic processes. Administrators decide which programs are to be articulated and negotiate

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John L. Bradley, Occupational Program Specialist, Maricopa County Community College District

details like facility rental, insurance coverage, and who will be the teacher. Negotiation of administrative details is possible because Maricopa County high school and college occupational administrators meet periodically to develop a county-wide vocational education plan. They tend to know and trust one another. Negotiation of administrative details can be very time consuming.

On the academic side, faculty decide the competencies included in each articulated course, the amount of college credit students may receive, and whether students have mastered the competencies which comprise an articulated college course. The Arizona Vocational Education Act of 1982 mandated that all vocational programs be competency based and this has been helpful. When faculty meet they are able to share course content since most is written in a common academic language. Face to face faculty meetings are an important part of the Maricopa Community Colleges' articulation process. So far negotiation of academic details has been relatively easy.

Articulation is taking place through the award of Course Credit, through Occupational Credential Acceptance, and through Resource Coordination. Course Credit is the most common means of articulation. Course Credit is . . . the granting of college credit for mastery of the competencies equivalent to a college course. For example, a Scottsdale Public School's graduate who completed one year of Graphic Arts at the Scottsdale Vo Tech Center will receive college credit for ADV 102 when he or she enrolls in the Advertising Art Program at Scottsdale Community College. These credits will be posted as illustrated in Table 1. The grade of "R" will be defined as "Advanced Placement Credit through Articulated Programs"

Occupational Credential Acceptance is . . . the granting of college credit for having a valid occupational credential. For example, Maricopa Technical Community College, Mesa Community College, Phoenix College, and

Scottsdale Community College Nursing Programs will award 24 NUR credits for a valid Practical Nursing License. Occupational Credential Acceptance Credit will be posted as illustrated by Table 2.

Table 1

The Posting of Course Credit

Term	Course Number	Course Title	SEM Grade	SEM HRS	SEM PTS
1985 Fall	ADV 102	ADVERTISING PRODUCTION METHODS	R	3.0	
	ADV 213	AIRBRUSH & PHOTO RETOUCHING	A	3.0	12.0
	ADV 203	ADVERTISING CAMPAIGN	B	3.0	9.0
	ADV 214	GRAPHICS CAMERA TECHNIQUES	C	3.0	6.0
	ADV 205	LETTERING & TYPE PASTE-UP	A	3.0	12.0
	SEMESTER GPA: 3.250	GPA HOURS: 12		15.00	39.0

Table 2

The Posting of Occupational Credential Acceptance Credit

Term	Course Number	Course Title	SEM Grade	SEM HRS	SEM PTS
1985 Fall	COMPLETED APPROVED PRACTICAL NURS PROGRAM		R	24.0	
	NUR 221	OBSTETRICS NURSING II	A	3.0	12.0
	NUR 222	PSYCHIATRIC NURSING II	A	3.0	12.0
	NUR 226	ADVANCED MED SURG NURSING I	A	2.0	8.0
	BIO 203	GENERAL MICROBIOLOGY	A	4.0	16.0
	SEMESTER GPA: 4.0	GPA HOURS: 12		36.0	48.0

Resource Coordination is . . . the sharing of faculty, facilties, and equipment. For example, Phoenix College and Metro Tech VIP have combined

resources in a creative and cost-effective way. Phoenix College has a Food Service Administration program, but no kitchen in which to teach quantity food preparation. Metro Tech VIP has one of the best equipped teaching kitchens in the West. Both Metro Tech and Phoenix College students will learn quantity cooking in the Metro Tech VIP kitchen. College students will receive regular college credit and high school students will become eligible for Course Credit.

As stated earlier, articulation occurs in stages. Stage One is well underway. There are hundreds of students enrolled in articulated high school courses.

Stage Two will begin next Fall. That is when high school graduates from articulated programs will begin to enroll in the Maricopa Community Colleges. Career Program Articulation Forms (CPA), that function like high school transcripts, have been developed to facilitate Stage Two. A CPA is included as Appendix A.

Each CPA has two parts. First are directions for the students and teacher involved. An attempt has been made to make the process as simple as possible and to put the burden of responsibility on the shoulders of the person who has the most to gain--the student.

Second is a Competency Attainment Record. This section of the CPA lists all the competencies that comprise the articulated college course and enable a high school instructor to check-off those competencies their students have mastered. The high school and college faculty agree beforehand what constitutes mastery of each competency and students only receive Course Credit if they have mastered all the competencies which comprise a given college course.

Be prepared for both high school and university opposition. Our state

universities are concerned about the potential loss of FTSE they will incur when we grant college credit for skills high school graduates mastered during high school. We are addressing this issue at the Board of Regents level by explaining what we are doing and by making the academic soundness of our approach apparent.

High school administrators are concerned that their students will opt for college courses with a subsequent loss of Average Daily Membership (ADM) and related funds. We only allow a high school student to enroll in a college course for college credit with written permission from his or her high school principal.

On the other hand, high school administrators are supportive of Course Credit and Occupational Credential Acceptance arrangements. These types of articulation recognize the quality of their programs and allow them to keep their students at home. Most high school administrators are also supportive of Resource Coordination because it makes optimal use of expensive laboratories.

So far all of our articulation efforts have involved vocational programs because that is what was mandated by law. All of our Articulation Agreements have been with large metropolitan high school district Vocational-Technical Centers because that is where high school vocational education course are taught in Arizona. There is no reason why the same principles can not be used to articulate the academic courses taught in comprehensive high schools as well.

There may be an easier way to serve students from small high schools. Next fall Mesa Community College will pilot test enrollment of Gilbert High School students in an entry level Mesa Community College vocational course and Rio Salada Community College plans to offer academic courses to advanced high

school students on the Cactus High School campus. Students will receive college credit. While there are a number of details to work out this may be the most cost-effective type articulation for both the high schools and colleges involved.

To close, two points should be emphasized. First, it is imperative that every Articulation Agreement have an academically sound foundation. Each detail will be critically examined by those who perceive a threat to the status quo. Second, it is important that Articulation Agreements be as simple as possible. Articulation will continue long after the original actors have retired as long as simple automatic policies and procedures have firmly been set in place.

Appendix A

Career Program Articulation Form
HOPEDALE COMMUNITY COLLEGE
Graphics Arts Program

KEEP THIS FORM
You may receive college credit if you have mastered all of the competencies equivalent to those included in the following course.*

GAP 101 - PRINCIPLES OF GRAPHIC LAYOUT - 2 Credits
Course Description: Printing methods and development of planning and layout skills.

Directions for the High School Graduate

You participated in a high school program articulated with Hopedale Community College and may be eligible for college credit. You will not be assessed fees for this credit if you do the following:

First - Apply for admission to Hopedale Community College.

Second - Ask the person responsible for student records at your former high school to mail copies of your official High School Transcripts and Career Program Articulation Forms to the Director of Admissions, Hopedale Community College, 5000 West Autumn, Hopedale, AZ 85555.

Third - Once you are admitted into the Hopedale Community College go to the Hopedale Community College Office of Admissions and Records and request that the Articulation Credit described on the official copy of this Career Program Articulation Form be recorded onto your official college transcripts.

Directions for the High School Instructor

Complete this form and make a copy. File the original with student's permanent high school records. Official Career Program Articulation Forms are to be forwarded to the College Admissions and Records Office using the same procedure as with an official transcript.

Give the copy of this Career Program Articulation Form to your student. Application for Articulation Credit is his/her responsibility.

COMPETENCY ATTAINMENT RECORD
(To be completed by the High School Instructor)

GAP 101 - PRINCIPLES OF GRAPHIC LAYOUT - 2 Credits

Applicant's Name _____ SS # _____

School _____ Date _____

Address _____ City _____ Zip _____

Signature certifying this applicant
was able to perform as indicated.

SCHOOL
SEAL

Applicant's Instructor _____

Applicant's Competence (the following checkmarks identify competencies this applicant has performed to industry standard)

1. Discuss the materials and equipment used in job planning and layout . . . . . ( )
2. Practice using the materials and equipment used in layout . . . . . ( )
3. Plan a job and make a layout for that job
   a. Thumbnail . . . . . ( )
   b. Rough . . . . . ( )
   c. Color comprehensive . . . . . ( )
   d. Specifications of the job . . . . . ( )
4. Compose an acceptable layout using thumbnail sketches, layouts and comprehensive layouts . . . . . ( )
5. Discuss the identification of color with objects and situations . . . . . ( )
6. Match colors and objects/situations
   a. Mix and Match . . . . . ( )
   b. P.M.S. system . . . . . ( )
   c. Tint screens . . . . . ( )
7. Discuss various methods of emphasizing and contrasing design elements . . . . . ( )
8. Make a design using screen tints, reverse printing, size and shape . . . . . ( )

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*Advanced Standing through Articulated Program Credit (Articulation Credit) is transferable within the Maricopa Community Colleges but is not necessarily transferable to other colleges or universities.

HOPEDALE COMMUNITY COLLEGE
Graphic Arts Program

You may receive college credit if you have mastered all of the competencies equivalent to those included in the following course.*

GAP 101 - PRINCIPLES OF GRAPHIC LAYOUT - 2 Credits
Course Description: Printing methods and development of planning and layout skills.

Competencies

1. Discuss the materials and equipment used in job planning and layout.
2. Practice using the materials and equipment used in layout.
3. Plan a job and make a layout for that job
   a. Thumbnail.
   b. Rough.
   c. Color comprehensive.
   d. Specifications of the job.
4. Compose an acceptable layout using thumbnail sketches, layouts and comprehensive layouts.
5. Discuss the identification of color with objects and situations.
6. Match colors and objects/situations
   a. Mix and Match.
   b. P.M.S. system.
   c. Tint screens.
7. Discuss various methods of emphasizing and contrasting design elements.
8. Make a design using screen tints, reverse printing, size and shape.

*Advanced Standing through Articulated Program Credit (Articuation Credit) is transferable within the Maricopa Community Colleges but is not necessarily transferable to other colleges or universities.

DIRECTION OF DENTAL AND DENTAL AUXILIARY EDUCATION*

Karen M. Duffy

I. Current changes in dentistry

  A. Changing patterns of dental disease

    1. Reduction of caries in children

    2. Retention of natural dentition in adults

  B. Changing patient demographics

    1. Shift in emphasis from needs of young to demands of Americans in their middle/later years

  C. Pressures of cost containment in the provision of health care

    1. Competition for the health care dollar

    2. Development of alternative delivery systems and payment mechanisms

    3. Competition among practitioners

      a. General practitioners vs. specialists

  D. Legislative initiatives

    1. Denturist

Karen M. Duffy, Director, Dental Assisting Education, Commission on Dental Accreditation, American Dental Association

*Topical outline of presentation

2. Unsupervised practice for dental hygienists

3. Credentialing/registration of dental assistants

II. How changes affect the educational preparation of personnel

A. Auxiliary educational programs

B. Predoctoral and advanced educational programs

III. Strategies for meeting the changing needs of dentistry

A. Instructional content area emphasis

B. Faculty qualifications

C. Resourceful institutions

IV. Possible curricula changes for future educational programs

A. Auxiliary educational programs

1. Length of programs

2. Content areas emphasis

3. Licensure/certification/registration issues

4. Alternative modes of delivery

a. Off-campus

b. Evening

c, Part-time

d. Articulation - high school, college, university

SMALL GROUP SESSION

Dental Science

Facilitator: Karen Duffy

Summary of Workshop Discussions

* Several states believe their secondary dental assisting programs are just as good, if not better, than postsecondary accredited programs. Program directors/instructors/coordinators were encouraged to review the Accredition Standards for Dental Assisting Education Programs and determine if their non-accredited programs already, or perhaps could, meet the standards. If so, the next step would be to petition the Commission on Dental Accreditation and request that the Standards on "Educational Setting" be reconsidered for dental assisting programs.
* Concerns addressed developing a network with state HOE staff and HOE inservice from state universities. "Coring" some dental education content areas (i.e., dental anatomy, dental radiography and dental materials) was also discussed. Such coring would allow those dental assistants who have completed that instruction not to repeat the content if they choose to go on to dental hygiene training.
* It appears that as more and more states consider a credential for dental assistants, it makes sense that the baseline eligibility criteria for setting for the certification examination will be graduation from an accreditation program. This in turn brings us back to the issue of accrediting high school programs.

Recommendations

* Pursue attaining accreditation by the Commission on Dental Accreditation for secondary dental assisting programs. Present requirements state that programs must be at the postsecondary level.

* Pursue articulation of dental-related curriculums: secondary dental assisting with postsecondary dental assisting or hygiene, and postsecondary dental assisting with dental hygiene.
* Review credentialling issues facing dental assisting, hygiene and laboratory technology.

NURSING EDUCATION ISSUES

Karla K. Berns

What does the future hold for nursing education? The answer is the same as that for all of health care--change and challenge. The changes coming in the 1990's (and some we are experiencing already) mean a challenge for all nurse educators. It means taking a hard look at what you do today as a nurse educator and what you will have to do to have nursing survive in the future.

You already know the major reason for the change--an attempt to reduce the upward spiraling cost of health care. We see sicker patients, shorter hospital stays and nursing department budgets cut to the bone. These are three major changes brought about by prospective payment systems. Attempts at cost containment have also led to a proliferation of same-day surgery centers, emergency centers, maternity centers, community clinics, home health agencies and the like in reducing hospital admissions. For nursing, it means increased staff efficiency, strong assessment skills, the ability to write and implement time saving care plans, and the proficiency to coordinate patient teaching and discharge planning. The need for critical care nurses and nurses at all levels skilled in rehabilitation and geriatrics will increase as America grays.

Karla K. Berns, Chairperson of Health Occupations, Northeast Iowa Technical Institute

The changes in practice are certainly affecting nursing education. Nurses will need fiscal expertise as hospitals and other agencies must be run like businesses to survive. Nurses will need courses in marketing, financial planning and negotiating. The nurse of the future will have to be computer literate. Computerized systems are now being used to elicit patient histories, manage patient records, analyze test data, and prepare staffing schedules. There is a trend in using registered nurses as generalists instead of specialists so flexibility and general knowledge will be important. This seems to be more true for the rural setting.

Another factor that will have a definite effect upon nursing education is the American Nurses Association (ANA) proposal on entry into practice. I personally feel that the ANA proposal is destroying the nursing profession. It is at least causing a schism in the profession. The fact that we now have reciprocity with the majority of states will be affected as each state goes their own way on this change. What effect will this have on the nursing shortage that is predicted and is already being experienced in some parts of the country?

When we break into our small group, we will be challenged to determine changes in nursing education curriculums to meet the changes in the health care industry. Just to spark your creativity, I will mention some that we may want to explore:

1. Further emphasis on physical assessment skills,
2. Increased gerontology for the practical nurse and associate degree nurse students,
3. Computer courses,
4. Multi-disciplined health care worker,
5. Clinical internship or preceptorship for the new graduate,

6. Increased mental health component in the practical nurse curriculum,

7. Home health component in the practical nurse and associate degree nurse programs, and

8. Articulation with secondary--1+1, 2+2.

SMALL GROUP SESSION

Nursing Education Issues

Facilitator: Karla Berns

Summary of Workshop Discussions

* Cost containment.
* Entry into practice issue.
* Government regulations regarding long term care and home health care.
* Trend toward using generalist rather than specialist.
* Who will determine who gives what care to the clients.

Recommendations

* Nursing has never been a leader in community health care nursing, now needs to assume a leadership role in educating public and become politically active.
* Nursing needs to market its skills and contributions to the health care industry. This will help in recruiting good students, thus improving nursing.
* Assess the current curriculums relative to geriatric content and, if indicated, increase knowledge and skills in the geriatric area.
* Investigate methods for nurses to expand roles, become more flexible in providing care.
* Continue to support and promote the associate degree for entry into nursing practice, especially since research has not documented any significant differences in the type of nursing care provided by nurses related to educational preparation.

VOCATIONAL HEALTH OCCUPATIONS EDUCATION IN HIGH SCHOOL

Nancy Langley-Raynor

It is indeed my pleasure to be a part of this exciting and much anticipated National Health Occupations Education Curriculum Conference. It is especially an honor to be among such prestigious panel members as we share with you several educational delivery systems that seek to prepare future health team members within an era of consistently changing technologies. I will preface my presentation by saying that the opinions I share are basically my own and do not necessarily reflect those of the conference planners. Moreover, I am not here to present the "North Carolina Story", however, if you ask specific programmatic questions, my frame of reference will likely be North Carolina. Having given this short commercial, I will proceed.

"Vocational Health Occupations Education in High Schools" is the topic. It is an educational delivery system that primarily came about through the George-Barden Act of 1946 and more specifically the Health Amendments Act of 1956. It is one, I might add, that has afforded me much satisfaction and reward both professionally and personally. Yet, following over twenty years of implementation, I still feel that the high school or secondary delivery

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system for preparing future health team members is perhaps one of the best kept secrets in education. The intent of my statement is certainly not meant to be negative. It is within itself a fact and an issue. Since the mid-fifties, specialization in the preparation of health team members has created a mentality and a myth that all bonafide preparation programs must be career specific in title and administered at the post secondary and/or university level(s). I sincerely hope the information I share with you today will help to dispel both the myth and the mentality. During the next few moments, I want to:

1. Define secondary health occupations education.
2. Describe at least three curriculum options.
3. Describe at least three delivery models including the philosophy upon which they are founded.
4. Identify at least two advantages and two disadvantages of health occupations at the secondary level.
5. Discuss at least three major future directions as they are influenced by educational trends and issues.

Definition

Powell, Farrar, and Cohen in their book entitled, THE SHOPPING MALL HIGH SCHOOL, say "If Americans want to understand their high schools at work, they must imagine them as shopping malls".[1] Secondary education has become another consumption experience in an abundant society. As shopping malls attract a broad range of customers with a variety of interests and needs, today's high schools afford perhaps the broadest range of selections from which students may shop and select. There is an astonishing array of both products and services conveniently assembled in one place and, I might add, with ample and convenient parking in most instances.

Among the many selections a high school student can make, Health Occupations Education may be one if it is offered in his/her location. A national survey reported in HEALTH OCCUPATIONS EDUCATION: A FACT SHEET BY THE AVA-HEALTH OCCUPATIONS DIVISION defines secondary Health Occupations Education as "a program administered through public institutions that grant a high school diploma and in some cases, a certificate (or a competency skills record) indicating the completion of a general or specified health specialty."[2] Two, three, or four year curriculums may be offered. These programs are also included under Federal definitions, "Education for health occupations comprises the body of related subject matter, or the body of related courses, and planned experiences designed to impart knowledge and develop understandings and skills required to support the health professions. Instruction is organized to prepare students for occupational objectives concerned with assisting qualified personnel in providing diagnostic, therapeutic, preventive, restorative, and rehabilitative services to people, including understandings and skills essential to provide care and health services to patients."[3]

Curriculum Options

Program and/or curriculum options in high school Vocational Health Occupations Education are generally founded on the natural, human, and social sciences. They may include, but not be limited to the following:

1. Health careers orientation and exploration offered at grades seven through nine. This is equated to a prevocational development curriculum design.
2. Entry-level skill development of a multidiscipline nature using a cluster curriculum design and geared toward preparation of non-credentialed aide and/or assistant health team members at grades

ten, eleven, and twelve.

3. Skill development in one or more health careers offered at grades ten, eleven, and twelve.

While high school Health Occupations Education may seem invisible among delivery systems for preparation of health team members, the number of students enrolled continues to gain significance. The United States Department of Education's most current enrollment statistics list 213,095 students in Health Occupations Education secondary programs, with 16,171 in cooperative education programs (1982).

Delivery Models

Referencing again HEALTH OCCUPATIONS EDUCATION: A FACT SHEET BY AVA HEALTH OCCUPATIONS DIVISION, nationwide there seems to be three primary delivery models for administering high school Health Occupations Education programs. They are as follows:

1. Comprehensive High School - This is a general school offering both academic subjects, college preparatory subjects, the arts, and at least six different vocational education subjects, i.e. Business and Office Education, Marketing Education, Health Occupations Education, etc. One or more comprehensive high schools may serve a district or a region.

2. Area Vocational Education Center - This is a center offering instruction in vocational education to students throughout a school, region or district. Students enrolled satisfy required graduation requirements in a home based high school, i.e. comprehensive high school, for a portion of the school day and complete the remaining portion at a center. The center may be located elsewhere in the school district or region. In the latter case, students are usually

bused from their home base school to the center. A variety of vocational education programs are offered at a center. Career specialty programs are frequently located at the center, i.e. dental assisting, medical office assisting, practical nursing, etc.

3. Magnet Health Science High School - This is a specialized school affording a variety of health career preparation programs at both the introductory and advanced levels. Students may also satisfy their academic requirements for graduation as well as their health occupations skill development preparation.

Philosphy

Philosophically, high school Health Occupations Education programs focus on the total education of each student. They not only attempt to stimulate a student's interest in a health career, but they seek to prepare a student with career decision making skills, for immediate employment, for further education and with practical life skills. Concommitantly, they also strive to prepare a student academically. Much emphasis is placed on academic excellence to ensure that each one achieves his/her highest capabilities. Encouraged and acknowledged is the need for a strong academic foundation as initial preparation for a health career.

Teaching/Learning Methodology

A variety of teaching/learning methods are applied with a given curriculum scope and sequence. There is much similarity to those strategies used in post secondary or university settings. For example, demonstrations, simulations, internships, shadowing, cooperative education, computerized assisted instruction, interactive video, etc. are but a few. Non traditional health team members serve as instructional resources to assist in eliminating sex stereotypes associated with certain health careers, i.e. male nurses,

female physical therapists, etc.

Health Occupations Students of America (HOSA)

Perhaps one of the most effective recruiting tools and teaching methods used is the student organization, Health Occupations Students of America or HOSA. Founded in 1976, it serves both secondary and post secondary students. As of 1986, thirty-two states have been chartered with over 32,000 members. It is an integral part of the curriculum. Competencies learned in the classroom and/or laboratory are enhanced through HOSA leadership activities and competitive events at the local, regional, state and national levels. Membership also teaches the student the importance of professionalism.

Financing

Funding for high school Health Occupations Education programs may include either local, state or federal monies or a combination of two or all three resources. Implementation of a program must be founded upon data that document adequate and/or appropriate student interest and community need. The responsibility for the funding process is through the vocational education division of the respective state department of education.

Faculty

Instructors in high school Health Occupations Education programs may include persons from a variety of backgrounds. This is dependent upon the curriculum option(s) and a respective state's teacher certification policy. For the majority of states, credentialed and experienced professional health team members are preferred candidates. All instructors must meet and maintain respective public school certification standards and maintain their health credential.

Emergency or provisional public school certification is available in many states for those individuals who are not fully certified upon employment.

Most states, however, place a limitation on the length of time an emergency certificate can be maintained and stipulate specific college and/or university coursework in an appropriate teacher education curriculum. In addition, some states require instructors to successfully complete the national Teachers Examination or its equivalent. Mandatory continuing education, for the purpose of maintaining a public school teaching certificate, is a common practice among states.

Advantages

To those of us who have had the high school Health Occupations Education and the Health Occupations Students of America experiences, either as a student, an instructor, an administrator or a program advisory committee members, the advantages are innumerable. These two topics are addressed with enthusiasm and tireless effort. The following is not all inclusive but represents a few major advantages.

Consider the student completer in pursuit of further education or immediate employment. With an initial preparation in medical terminology, communication skills, consumer knowledge, job application skills, health sciences, health care/maintenance skills, etc., would you not actively recruit such an individual? A high school Health Occupations Education completer's profile is frequently characterized as follows:

1. Has confirmed his/her career decision based on sound educational experiences,
2. Has acquired the academic prerequisites for entry into a post secondary/university program,
3. Has a comprehensive understanding of the current health care delivery system, and
4. Is employable with entry-level skills given the respective

curriculum option.

However, a major advantage to a student, an educational institution, and an employer is the student's commitment to a career goal. This factor alone reduces attrition. While all students may not meet both educators and/or employers' total expectations, one must admit, given students and employees who have not experienced Health Occupations Education, the risk of a questionable investment is significantly lessened. This seems a logical rationale for cooperative and articulative efforts between and among educators and employers. These efforts would improve the quality of instruction and contribute to the relevancy of each student's preparation.

Disadvantages

Where there are advantages, there are usually some disadvantages. Unfortunately, most of these are disadvantages for the student interested in enrolling and completing a given curriculum scope and sequence. Again, the following is not all inclusive, but represent a few major disadvantages. Providing a comprehensive education for a student is an admirable goal. Pragmatically, however, it can be a complex one to achieve. Even in the age of computer scheduling, competition for blocks of time is real. Being able to enroll in required courses for graduation and secondary Health Occupations Education, a course elective, can involve conflicts.

Students with aptitudes for health careers are frequently advised by guidance counselors to enroll in strictly academic courses including electives. Stereotyped labels regarding vocational education are not always appealing. Centers and magnet schools, if located off campus, can limit a student's participation in extra curricular activities.

For the high school Health Occupations Education instructor, student maturity, interest, and aptitude levels can vary considerably within a given

class, a course, and a total program, since an open door enrollment policy is practiced. Grouping according to abilities is considered discriminatory and not commonly practiced. Recruitment is necessary to maintain appropriate numbers because the program is an elective and not required for graduation.

Future Directions/Trends and Issues

A discussion of future directions regarding secondary Health Occupations Education contingent upon trends and issues is a presentation unto itself. Due to time constraints, I will limit my comments to some of those trends and issues occurring in public education that are and will continue to influence the future of the program.

We hear heralded the future is upon us! All around us industrial and educational intelligentsia are forecasting and projecting based on mega-trends and mega-data. Thanks to computer technology, tons of information are at our beck and call. Given all this, they have made a startling discovery, public education needs fixing. Not to sound disrespectful, I do not personally find that to be an overwhelming discovery. Historically, public education has been a pawn in a chess game for affecting societal reform. The directions for this reform have been heavily influenced by our political and/or governmental system. While this presentation is not a debate on the strengths and weaknesses of such a system, change of this nature has seemed to cloud the intent and purpose of public education. Public schools have served as arenas for testing human rights, civil rights, equality, etc.

Unfortunately, researchers and the media have chosen to measure public school effectiveness primarily on the results of standardized tests. Moreover, they have been successful in influencing our society into believing that public education is just about as poor as it can possibly be. Boyer, in his book HIGH SCHOOl says:

"Education is in the headlines again. After years of shameful neglect, educators and politicians have taken the pulse of the public school and found it faint. Concern for the health of public education, stirred by a spate of new studies, offers a fresh hope that in the years ahead we will be able to adopt a serious, coherent plan for school reform. Getting the public's attention has always been the first step in the march toward progress in our nation."[4]

The Carnegie Report on the American high school begins with the conviction "that time for renewing education has arrived."[4] It further states that Americans have the best opportunity in this century to improve schools.

Public educators are currently in the midst of implementing legislation that has grown out of the 1984 National Commission's Nation At Risk report with the hope of revolutionizing education. What does the many states' enactment of the reform laws call for and how will it influence the future directions of secondary Health Occupations Education?

For secondary Health Occupations Education the legislation may serve as an issue seeking to resolve an issue. Throughout our nation, rigid accountability standards are surfacing. States are increasing graduation requirements including additional science and math credits. Some local school districts, in their zeal to prove excellence in education, are even adding to their respective state's requirements. Pilot studies are being conducted to determine the effect of a longer school day/year. Tougher certification requirements for teachers are being implemented.

Career ladders, for teachers as incentives for upgrading teaching skills and gaining additional educational degrees, are being field tested. Increases in teachers' salaries and other special perks are being offered. Large program fiscal improvement packages are being appropriated by state

legislatures. Even the Vocational Education Carl Perkins Act emphasizes program improvement.

Being an eternal optimist, I predict some real assets coming for secondary Health Occupations Education. The following are but a few I believe classrooms and laboratory facilities will occur. Moreover, they will be better supplied with current/appropriate instructional materials and equipped with state-of-the-art equipment. I foresee telecommunications technology being used more frequently in instruction and being used to articulate both within the school systems and with post secondary and/or university and industry settings. I predict more useful and usable data being effectively applied to determine appropriate placement of programs and to determine the need for removal or redirection of ineffective programs.

I see a systems approach to maintain and develop teaching. This should reduce attrition and enhance effective teaching based on researched criteria and evaluation models. This should add to teacher education enrollments for teacher education programs.

By the same token, I foresee some liabilities resulting from this reform that could results in critical issues concerning the future directions of secondary Health Occupations Education. With the increase in graduation requirements and especially math and science, students' opportunities for enrolling and completing a secondary Health Occupations Education curriculum scope and sequence may be threatened. Decrease in enrollments can result in elimination of programs. These decreases could proportionately influence student enrollments in post secondary and/or university institutions and employing agencies.

Increased demands for obtaining and maintaining teaching certificates may lessen the supply of qualified secondary Health Occupations Education

instructors. Unavailable candidates/instructors could result in redirection and/or modification of curriculum content or threaten the implementation and maintenance of programs. Again, the impact could influence enrollments in teacher education programs.

Given these perceived liabilities, Health Occupations Education educators must learn to work smarter, not harder. Accountability has never seemed to inhibit the productivity of health team members. It is a concept and yes, a skill, we learn early in our preparation. I do believe, however, we must become more effective program managers and administrators. We must make both the public and private sectors aware of the advantages of secondary Health Occupations Education through a creative marketing program. We need to negotiate with public school administrators for a competency based curriculum founded on the natural, social, and human sciences and worthy of science recognition and/or credit. Thus, student enrollments should increase.

We especially need to make articulation a reality between the high school and the post secondary/university systems. By implementing creative articulation models, i.e. two-plus-two, four-plus-one, one-plus-one, etc., students and guidance counselors should be more attracted to the benefits and enrollments should increase.

Most importantly, we as public school educators must be willing to accept the things we cannot change and change those that we can. Political and governmental influences within and upon the public schools system will most likely always exist. As long as we keep abreast of these changes, seek to be proactive in our decision-making, and maintain a positive attitude toward achieving excellence in education, secondary Health Occupations Education should remain a viable and integrated part of the public school system. It must be based, however, on rational, systematic, and accountable program planning, evaluation, and management.

Summary

This presentation has sought to dispel the mentality and myth that secondary Health Occupations Education is not an invisible preparation program for health members, but a recognized, valuable component within the total education system. The concepts and opinions have been expressed in an attempt to clarify the program's philosophy, goals, and objectives. Moreover, the curricular designs, methodologies and delivery models have been presented to demonstrate the advantages and disadvantages of such an educational approach. Future directions, both trends and issues, are and will remain colored by political and governmental influences that seek to affect societal reform through public education. Change must not occur just for the sake of change. However, in an age of technological change, public education need not be left behind or found lacking. It is the right of every citizen to have an education and it is our obligation to provide each one the very best an educator's skills can offer.

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SMALL GROUP SESSION

Secondary Programs

Facilitator: Nancy Raynor

Summary of Workshop Discussions

* Competency based programs would facilitate vertical and horizontal articulation at all levels.
* Vertical articulation. Each part must be compatible (California matrix a good example). Allow advance placement through challenge exams. Resolve the issue related to staff credentials.
* All teachers have the responsibility to: be curriculum experts, know the relationships of their subjects to others, teach students how to transfer knowledge and skills, include the basics (English, math, social science) in their curriculums, and negotiate science credits with other institutions.
* Standards for secondary education are a means of accountability and a way of sharing with other states. North Carolina is meshing state accreditation and program evaluation for vocational education. California uses quality criteria for classroom standards and can be used to justify new equipment for programs.

Recommendations

* Use computers in classroom. They are a means of teaching course materials and while students are learning new concepts, they are also becoming computer friendly.
* HOSA provides a good teaching opportunity and gives students recognition and visibility while improving student skills.

SMALL GROUP SESSION

Postsecondary Allied Health Programs

Facilitator: Max Detmer

Summary of Workshop Discussions

* Opportunities for flexibility in programs and competencies through changes in accreditation standards.
* Boards should be more flexible in allowing program modifications especially regarding multidisciplinary activities, e.g., home health care and multicompetent personnel.
* Issue of indemnification of hospital and staff or clinical site. Need to require insurance and hold harmless for clinical staff.
* Cost of clinical experiences, especially with reduced financial resources, add to the cost of already expensive programs. This may be due to occupancy rate in hospitals and character of patient treatment in terms of their stay.

Recommendations

* Develop a database for implementing change. This would include needs assessment from employers, students and others involved with the educational program. This could be through the use of an advisory committee. Keep others (employers, clinical instructors) informed regarding program objectives, student/graduate abilities. Keep communications open and frequent between educational program and future employers.
* Provide a mechanism for instructors to keep current with changes in their specific field.
* Substitute work simulations for some of the clinical experiences. Use computer assisted instructions, especially simulations to replace some of

the clinical.

* Include problem solving as a part of the curriculum so students will know how to apply basic knowledge to a variety of situations. This will also teach students how to find answers after graduation.

SMALL GROUP SESSION

Continuing Education

Facilitator: Margery Wasicek

Summary of Workshop Discussions

* Delivery systems such as partnerships, delivery and advanced technology (interactive television and teleconferencing) should be considered for use in delivering programs.
* Who pays for continuing education? Participants, consumers, employers.
* Continuing health education directors need to be proactive, not reactive.

Recommendations

* Increase marketing and public relations activities.
* Consider nontraditional times and places for delivery of continuing education programs.
* Design programs after task analysis and needs assessments to make them more relevant for participants.
* Recruit persons with advanced degress and expertise in curriculum to assist with development of programs.

National Health Occupations Education Curriculum Conference
October 8-10, 1986
Des Moines, Iowa

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